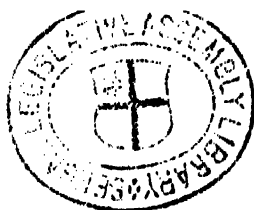


STABILIZATION OF PRICES





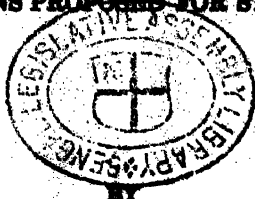
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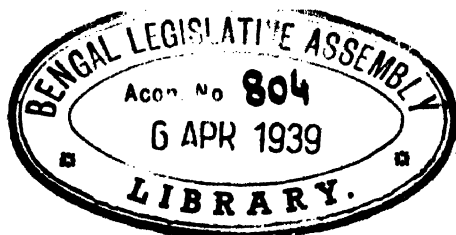
STABILIZATION OF PRICES

A CRITICAL STUDY OF THE
VARIOUS PLANS PROPOSED FOR STABILIZATION



BY
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To
My FORMER TEACHER AND COLLEAGUE
EDWIN WALTER KEMMERER
WHOSE DISTINGUISHED ACHIEVEMENTS
IN SCHOLARSHIP AND PRACTICAL
CURRENCY REFORM HAVE MADE HIM
THE BENEFactor OF LEARNING AND
MONETARY PROGRESS

AUTHOR'S PREFACE

This book is an attempt to state and analyze a problem which at present engages the earnest attention of a large body of economists and laymen. It has reached a point where many students are convinced that some step more positive than discussion and study should be taken. I am not able to concede that the situation is so desperate as to call for such a measure or that we are equipped with the knowledge necessary to determine what that measure should be. If this effort fails to offer a positive solution I hope it will at least provide the stimulus for a more effective and satisfactory study of the problem. I have tried to use the inductive method so far as possible. It has been necessary to marshal considerable statistical material. The greatest care has been exercised in the reading of proof, the checking of quotations and the verification factual calculations. I wish to apologize for any errors which may remain undisclosed and uncorrected and hope that they will not disturb the burden of the argument.

It is difficult to make acknowledgments. The roots of such a work reach back so far and extend into such multifarious pockets of soil that a complete statement of credit due becomes impracticable. It is an agreeable privilege, however, to be able to single out one to whom gratitude is particularly and overwhelmingly due, Professor Edwin Walter Kemmerer. As a student I worked under him with pleasure. As a teacher I worked alongside him with pride and profit. The field of monetary theory became an entrancing vale in which we have pressed our explorations. His clear exposition and refreshing tolerance were an inspiration. The seed of this work was planted in his seminar and its cultivation progressed to maturity under his encouragement. To Professor Frank A. Fetter I am indebted for my

foundation in theory. He was ever ready with advice and help whose great value my increasing maturity as a student has served to emphasize. In particular do I owe him thanks for his careful examination of the chapters on the discount rate and for valuable constructive criticism. It would be difficult to discover kindlier or abler counsellors than Professor David A. McCabe and Professor Frank H. Dixon. They were singularly liberal with their time and labor. Their support and encouragement have been a source of great comfort to me.

I wish to thank Professor F. W. Taussig for his careful editing of the chapter on multiple loans. This appeared in the *Quarterly Journal of Economics*, August, 1928, under the title, "Borrowed Reserves and Bank Expansion." I acknowledge the kind permission of that periodical to use the article on this occasion.

I am grateful to Professor James D. Magee of New York University for a careful reading of the text while under preparation and for many helpful suggestions. To Professor Walter E. Spahr of the same institution I am obliged for a painstaking criticism of form and methodology.

JOSEPH STAGG LAWRENCE.

Princeton, New Jersey.
November, 1928.

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PART I

STABILIZATION OF PRICES

CHAPTER I

The Problem Stated: Shall the Quantity of Gold Subject to World Influences of Supply and Demand or the Deliberate and Conscious Administration of Men Determine the General Level of Prices?

MONEY shares with love the principal place in the firmament of man's interests. Proverbially the source of all evil it has been at once the weapon of the mighty, the goal of avarice, the instrument of philanthropy and its explanation the eternal controversy of scholars. To the common man it has been an unilluminated enigma. Like the riddle of the sphinx a false answer spells disaster and he who essays to provide it must proceed warily.

Whence came this sinister yet beneficent institution? We find no mention of it in Genesis. It does not appear in the State of Nature postulated by the philosophers of the eighteenth century. It is distinctly a by-product of man. As soon as he emerged from his crude savage state he became a specialist, a herdsman, farmer, blacksmith, miller or tailor. As a tailor he did not shoe his own horses or raise all his own food. Neither did the farmer or the blacksmith make all their own clothes. They bargained with each other and each traded the surplus that he produced for articles produced by others, each a specialist like himself. This involved many difficulties even in a primitive community and in seeking their solution emphasis was placed upon a certain commodity, usually the most marketable, as the common medium of exchange. Such a standard good served two purposes. It could be used in the direct satisfaction of human wants or it could be traded for other goods to be

used for that purpose. From the dawn of its introduction, most money has served this general dual purpose. Through a system of trial and error, modified in some measure by the experimental capacity of the community, various commodities succeeded each other as the standard. Of all these silver and gold attained a pre-eminence and a permanence not approached by the others.

With the increasing complexity of human relations, banking systems made their appearance. Their function seems to have been that of brokers between those who had idle quantities of the standard and those who desired to borrow, safekeeping and paying interest to the former and lending and receiving interest from the latter. At various times the state stepped in and assumed the duty of vouching for the weight and fineness of the coins as a sovereign prerogative. In order to save the loss involved in abrasion and the inconvenience of handling large amounts, the state likewise stored a portion of the metal and issued warehouse receipts for it, which passed in circulation and served as media of exchange with the same effectiveness as the metal coins so long as the representation was bona fide and capable of corroboration through redemption. People became accustomed to the new media and as long as the foregoing condition prevailed it was a matter of indifference whether one paid in coin or certificates. Let us see what has happened. Originally the standard good served a twofold purpose. It could be used directly or it could be exchanged for something else. It had a value in use and another in exchange and through the law of compensation, these two values were kept in equilibrium. No one would exchange a quantity of gold for goods if the goods were worth less to him than the gold. If prices were high and the value of gold for purposes of exchange, low, there was always an alternative valuable use. This was distinctly true of the precious metals and to-day, we see the natives of India hoarding their coins when they have plenty or converting them into ornaments. Among the civilized and progressive nations this alternative use gradually lost its attractiveness. The average man in

the street to-day in a gold standard country does not know that his money has a gold equivalent, which he may realise should he choose, or if he is aware of the fact, it does not interest him. The very use of certificates diminishes the suggestibility of the metal.

The function of money as a medium of exchange, as a standard of value, as a standard by which men measured each others debts became paramount. The function of money as a means of direct satisfaction became relatively insignificant although always serving, potentially at least, as a crude stabilizer of value.¹ Money based upon metals did possess certain virtues dependent partially upon the value of these metals in alternative uses and partially upon the fact that other nations were always willing to take them for their direct or indirect uses.

Furthermore, a limit was placed upon the rate of depreciation or appreciation of money due to the slowness with which the supply of the metal changed relative to demand. The alternative direct uses of the metal always hovered in the background, increasing as the value of money decreased and diminishing as the value of money increased. Finally as between nations the ready flow of money from one to the other in the direction of higher value tended to check the rate of rise or fall in any community.

Although friction developed at times and the system in extreme or prolonged crises had to be abandoned, it has on the whole served man well.

The fortuitous and disastrous circumstance of war constituted such a crisis. Practically all the nations of the earth departed in varying degrees from the gold standard. We need not tarry to discuss the necessity or wisdom of these measures. The time has come to take stock and count the cost of the interregnum.

The opinion here is not unanimous and it is the discord in the monetary counsel that forms the subject of this

¹ To-day direct personal uses have yielded to the demand for gold in the arts as an equalizing influence on its value.

paper. There are those who maintain that the gold standard has been given a bill of health which is not sustained by the facts, that its incalculable aberrations have been the cause of many social ills, of grave injustices, of serious disturbances to trade and industry. It is not the departure whose cost should be counted but the return. It is time that the race emancipated itself from the thralldom of gold and freed its destinies from the unpredictable vagaries of a metal incapable of judgment, discernment or discretion. Price should depend not upon quantities of gold but upon the deliberate administration of men.

We shall examine with some care the counsels of those who speak in this strain. Some advocate the entire abandonment of gold. Others favor its retention with its power for evil anæsthetized through human manipulation. The guiding instrument of control in practically every instance is an index number. A number advocate the use of additional guides such as the state of employment, the level of wages, the stock of goods on hand, etc. The most advertised plan of all² involves rigid control in accordance with the fluctuation of the index number of wholesale prices.

For the most part these men are very effective publicists. They are skilled in the art of presenting their case to the public and it is impossible to accuse them of being shrinking violets. Their zeal leads them at times to display a higher regard for the strength of their briefs than for a judicial consideration of all the evidence.

The literature on the subject is vast. The public has been deluged by a flood of books, pamphlets and articles. The writer does not pretend to have made an exhaustive study of all that has appeared. The basic premises are identical. This treatise presents a consideration of the best known and most representative proposals. Of these the most widely heralded and the most "managed" is the "stabilized dollar" of Professor Irving Fisher.

² *The Stabilised Dollar*, Irving Fisher.

CHAPTER II

The Functions of Money—A Medium of Exchange—A Standard of Value—A Storehouse of Value—A Standard of Bank Reserves—A Standard of Deferred Payment—The Responsibility of the Standard in Maintaining the Ratios of Distribution—The Most Important Function—The Incidence of this Function in the Process of Determining Personal Incomes—Its Importance in Determining the National Dividend.

THERE rises, of course, the question as to the function and purpose of money in modern society. Can we eliminate it altogether as August Bellamy attempts in his ideal state or is it so inextricably associated with the satisfaction of our daily needs that it has become an indispensable necessity?

Certain it is that the human race at a date not so distant as man counts time managed to get along without it. The residents of a mediaeval manorial community rarely saw and still more rarely used money. The social unit was small and self-sufficient, the wants of the individual few and were for the most part satisfied through his own efforts. He raised his own food, built his own home, made his own clothes. His common social requirements, justice and protection, he purchased from his immediate overlord with his own products plus a vow of allegiance and the willingness to support, with his life if necessary, the interests, predatory or otherwise, of that superior against the outside world. All this could be accomplished without the use of money and was.

In our own land we found the aborigines managing without a common medium, an example which was necessarily followed by the early settlers. All this suggests what is well known, namely, that the more primitive a community the better able it is to get along without a system of exchange and per contra the more advanced the community the greater the need for some device which will represent

purchasing power or serve to define the ratio of exchange.

The analysis of function may well be classed among the fundamentals of economics. The statement has become more or less stereotyped and among the numerous matters that the beginner is expected to commit to memory is this schedule of functions. The neophyte is told that the primary function of money is to serve as a medium of exchange. The abstract principle is usually illuminated by an example of the following kind. A is a farmer who raises wheat. In fact he raises more wheat than he wants for his own family and stock, but since "man cannot live by bread alone" he must take his surplus and exchange it for salt, sugar, clothes, etc. Should his family be in need of coal, he must go to B, the coal dealer. Unfortunately B is not interested in wheat. He has his eye on a new six cylinder *Blick*, and is trying to find some one with that particular kind of a car who is in need of coal. The difficulty has been suggested. A must solicit coal dealer after coal dealer until he finds one who needs wheat. In other words, the wheat farmer must find not only a coal dealer but a particular kind of a coal dealer, to wit, one who wants wheat. This difficulty is referred to in standard texts as the requirement of double coincidence in barter. The presence of money removes this obstacle. The farmer can sell his wheat to any one who has the money and wants the wheat. The sum he receives can be used in the purchase of the coal and the coal dealer can use it to buy the car and everybody is comparatively happy. No matter what you make or what you have you can always exchange it for what you want provided only that market values are equal. Money is the medium. It is the instrument by which the exchange is consummated. All our definitions of money stress this quality of currency. The more nearly a commodity passes from hand to hand for the sole purpose of achieving an exchange, the more nearly it becomes true money. This is the underlying thought in Walker's statement: "Money is as money does."

All definitions stress the requirement that the commodity must pass freely from hand to hand, that it must be generally accepted in the community and that he who accepts it has in mind chiefly the intention of again passing it on in payment for goods or services. It is a certificate of claim against those who have what we want.

In the second place, money is a standard of value. Here we encounter difficulties for value is to economics what faith is to religion. It is fundamental. One may be a specialist, interested in the stock market, in the relations of capital and labor, in the principles of money or the practice of banking. If he pursues his studies with sufficient diligence and depth, he will come ultimately to value as a basis. To the superficial but intensely practical business man value presents no problem. It is the estimated price that an object or a service will bring in the market. That same business man would cheerfully pay ten thousand dollars to have his son play quarterback on the football team, and that satisfaction cannot be marketed. He can sell it no more than he can purchase it. Yet we have here a fact highly esteemed by the father, a condition desired with an intensity that varies with his own background and standards. The same business man who has given us our first definition of value will now be the first to concede that the condition wherein the apple of his eye has achieved the family ambition has great value to him. Here we have two concepts of value not comparable, and only one of which is measurable in objective tangible units. One is an estimate expressed in dollars and cents and the other is a state of mind, an agreeable emotion which like most matters in the realm of the psychic defies precise measurement.

Value wears the mantle of a dual personality. In one capacity it emerges on the market place as an objective fact. It is a quantitative magnitude stated in terms acceptable to the members of the market community. A car is valued at a thousand dollars, i.e., if offered in the market where cars of that type are bought and sold, it would find a buyer who would be willing to pay a thousand dol-

lars. We have expressed that value in terms of a unit, the monetary unit. The dollar is the yardstick we have applied to the car to determine its market 'length.' It serves as a standard of value.

In its other rôle value trespasses upon the domain of psychology. On a stand in the front room rests the family bible. Immigrant ancestors brought it over in 1725. It has descended by the rule of primogeniture. The births and deaths of the family are recorded in it. It is annotated in the hand of a great grandfather, a famous divine of the Revolution. A "priceless" heirloom to the family, an interesting copy of a rather common edition of an English bible to the book dealer. What is its value? Clearly it has two, immensely disparate. To the book dealer it has a very definite value expressed in dollars, a value vicariously derived, i. e., based upon the anticipated valuations of book buyers. In the case of the family we have a problem that is more complicated. While they have regarded this object with an exalted esteem, it would hardly be safe to offer them a price without limit. At some point the price would have an attraction in excess of that attached to the book. Where that point would be depends upon a number of strictly personal factors, the reverence of the owner not only for the character of the book but for his ancestors, the opinion of other members of the family and last but not least, the state of his own means. Value here is a subjective fact and does not yield readily to mensuration. No two individuals are exactly alike and subjective value is an individual, personal psychic fact. And yet when we attempt to gauge this indefinite, vague esteem, be it intense or tenuous, we must rely on some unit.¹ Consciously or unconsciously we revert to the dollar in which we have been accustomed to express the values of the market place.

The monetary unit therefore serves as a standard of

¹ B. M. Anderson would not agree with this. He postulates an absolute value, to the writer, at least, a very elusive concept. Value, Anderson states, is absolute and is not measured in terms of the value of other units. Comparisons are impossible for you cannot compare a bushel of apples with a bicycle.

value when we use that term in the objective sense and also when we use it in the subjective sense.

These two functions, service as a medium of exchange and as a standard of value are basic. All other functions are considered derivative. Among these may be mentioned the use of money as a storehouse of value, as a standard of bank reserves and as a standard of deferred payment.

In civilized countries money rarely serves as a storehouse of value except in periods of violence where invasion or anarchy threatens. But in the remote corners of the earth, particularly in such a place as India, money is hoarded. It is a surplus of purchasing power set aside for a lean year or as a fund to be passed on to the next generation.

As a standard of bank reserves the monetary unit serves as a basis for a large superstructure of credit. One dollar in a bank reserve supports about ten dollars in bank deposits,² and increase greatly the total effective media of exchange.

Finally, as a standard of deferred payments, it defines the equities between debtor and creditor. It measures the amount due to the one and owing by the other.

For a long time this statement of the functions of money has been accepted by students of economics. It is embedded in the literature of the subject as the doctrine of equality is embedded in the Declaration of Independence. It has become a part of the creed, revered and undisturbed. While the author has no iconoclastic ambitions and recognizes that the acceptance of a principle by generations of thinkers establishes a strong *prima facie* case in support of its validity, he deferentially urges that the foregoing analysis is inadequate.

Underlying this array of "functions" is one of a far more profound character, of far greater significance from the point of view of social welfare. It is concerned with the role that money plays in the distribution of wealth.

The world is a human hive, its members ever occupied in creating values. Some of these are tangible and sub-

²This ratio varies from time to time.

stantial, the farmer with his crops and the artisan with his material products; a great many are in the nature of services designed to make existing goods more valuable or to add to the effectiveness and skill of agents engaged directly or indirectly in their production, e. g., the contribution of the railroad worker, the policeman, the teacher, the physician: others again provide services of an ephemeral nature whose purpose may be to remove or allay human friction or add the tang that spices our living days. Among the latter group are the lawyer, the preacher and the entertainer.

Taken altogether they bring forth, day by day, a literal stream of goods and services that make life worth living and add to the sum of human wealth. We can conceive of this collective product as emerging from human hands and minds and deposited on a huge conveyor belt forged of the same links which bind men into a social unit. As this gigantic stream pursues its way through the channels of need, the farmer steps up and makes selections. He is attended by a host of others consisting of these self-same groups which made deposits on the belt. We see the artisan, the railroad worker, the policeman, the teacher, the physician, the lawyer, the preacher and the entertainer. It requires no reflection to realize that this enumeration is not exhaustive. It is but the barest suggestion and complicating factors which a fidelity to truth would demand are omitted that the analogy may remain clear. We have here a crude social concept of production and distribution. In the first stage we witness deposits made on our conveyor belt. In the second stage inroads are made into this mass of social income. It is divided and distributed. Each individual steps up and makes his claim.

Obviously some institution must be devised to regulate these processes. Without such control we would have economic anarchy. How shall we decide how much the artisan is entitled to withdraw from the flow of social income? What principles shall be used in the division of this stream of wealth? Two primary factors control and guide

the distributive process. The first deals with the intensity with which the contribution of an individual is desired by those who participate in the distribution. The second upon which the first depends, to a certain extent, deals with the relative scarcity or plenty of the particular good or service which is added to the stream as it flows by. Jack Dempsey fights the caveman of the southern hemisphere. He devotes four minutes to his decisive but rather perilous conquest. He extends his great arms out over our conveyor belt and sweeps off a fortune. Thousands of men were willing to offer the produce of three or four days' work to see him in action. The intensity of the desire for this service amounted to a passion. As the guerdon of battle he exacted willing tribute from the hosts who witnessed with fevered emotions the defense of the greatest jewel in the crown of sportdom. Not only do we see here intensity of desire to the Nth degree, but we have at the same time a policy of infrequent gratification dictated by the business interests of the champion. The two factors which determine the extent to which we can exercise claims upon the valuable freight of our social belt are present in extraordinary force. These factors are much more discernible and understandable in this extreme case than they would be if we attempted to analyze the precise reason for the distributive share of a janitor. It suggests a valuable and much used pedagogic device. It is the application of the principle of exaggeration to the exposition of a strange or abstruse doctrine. The microscope applied to a minute organism to expose it to human vision is an illustration of the same principle.

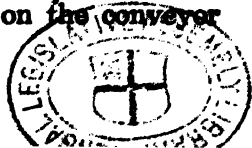
Obviously the determination of the precise share of social income to which a given desire and scarcity of product entitle the producer is no simple problem. Although modern civilization has given us a courteous exterior we are a pack of snarling wolves when it comes to defining our shares. Every step is weighted with friction, not only disagreeable but often dangerous. Every strike is but the belligerent manifestation of dissatisfaction by a group, every effort to stifle competition and secure monopoly power, every at-

tempt to deceive a consumer, every interference of the government in the regulation of labor and capital, is evidence of the painful social discord experienced as our imperfect processes of distribution function. These pains are constant, due to the necessity of continuous adjustment between the many interests clamoring for larger portions of the social income stream or attempting to maintain what they have. If we had a static society in which the power of the various groups and the ratio and importance of their contributions to the flow of social income remained constant, it might be possible to eliminate these pains. That is it might be possible on one condition. That condition would consist of the availability of a certificate of claim against our stream of social income which would always secure to the possessor a definite, fixed portion. In other words, that condition would be fulfilled if we had a monetary unit with perfect stability of purchasing power. This is, after all, the basic function of money. To him who has contributed to the income stream of society it serves as a counter claim against that same stream. To how much of that stream is he entitled as a result of his contribution? As he deposits his products society presents him with claim certificates the amount depending upon implicit or explicit agreement. If he is satisfied he is satisfied only because they represent vicarious possession of a portion of the income stream which seems to the particular individual equitable. Money therefore does not define this portion. The definition depends upon the two factors to which we have already adverted. But once defined, money is supposed to *fix* the ratio. The workman strikes because he thinks his labor is worth so many bushels of wheat, so many rooms for shelter, and so many other units of clothing, pleasure, etc. He accepts a definite number of dollars, because he believes that such a number will secure for him the real goods and services which he deems a proper compensation for his own efforts. The underlying bargaining processes and the strength of the various factors, determined or defined the ratio between the products or services of the workman

and the products and services on our endless conveyor belt which he could secure in return. So determined and so defined, money should maintain the ratio. We may call that the distributive function of money.

How important this function is, but a moment's consideration will suffice to demonstrate.

Let us use the price of beefsteak at \$.25 a pound as representative of the power of our claim certificates upon the stream of goods and valuable services that constitute the social income. A textile worker has, through accepted bargaining processes, the outcome of which are ultimately determined by the two factors we have mentioned above won a monthly wage of \$100.00. This may not accord with his sense of social justice or with his estimate of the value of his services. Be that as it may, he knows that for the time being he has exhausted his power to secure a better ratio in the distribution of income, and he is satisfied if for no other reason than the knowledge that a protest is futile. That one hundred dollars simply marks to him a stage in the final satisfactions which he expects as the result of his month's work. It measures the value of the claim which society will recognize when he steps forward to pick off the belt, rooms, clothing, food and recreation. His monthly share consists therefore of the equivalent of four hundred pounds of beef. Let us assume now that something happens to undermine the validity or the power of the certificates which are presented by the worker. Instead of being able to secure a pound of beef for twenty-five cents, he must now pay thirty and everything else on the conveyor belt reacts in the same proportion. His income has now declined from an effective equivalent of four hundred pounds of beef to three hundred and thirty-three. Through the operation of insidious and apparently uncontrollable and inscrutable forces the very basis of his bargain with society has been violated. The monetary unit through a change in its power of control has broken faith with the original parties to the compact. The ratio between the worker's services and products and those on the conveyor



belt has been altered. Every single bargain made on the old basis is affected and in practically every case the loss of one of the parties finally comes to rest as the gain of another. In this particular case it may have been the employer who has profited. An implicit bargain has been violated and a social injustice born. Money has failed in its service as the instrument of economic distribution.

The results in this case are easy to predict. Resentment rises in the breast of the worker. He is being cheated. It matters not that he is rather hazy as to how it is done. His inability to understand the *modus operandi* will serve only to inflame him the more. His discontent is likewise fed by the increasing prosperity of his employer, who guiltless tho he may be, of definite intent, is nevertheless profiting by the change. For the employer disposes of the product in which is incorporated the service of the worker. As this product appears in the channels of distribution it shares in the general rise in prices. One element of cost, that of labor has so far remained stable. The difference, provided it is not offset by other factors, redounds to the profit of the employer. A period of rising prices therefore is characterized by two salient symptoms. The first of these is the increasing margin of profit realized by the entrepreneur a consequence of which is a decline in the number of business failures. The second is a growing current of discontent on the part of the working classes marked by strikes and conflict between workers and employers. Neither is conducive to social health. All the painful strife which attends the bargaining process must be repeated. A new ratio must be discovered which will be satisfactory or which can be accepted by both sides. After much ill feeling, after the destruction of some property, after the waste of plant and time, after the effacement of any sympathy which might have previously existed between employer and worker, both sides settle back until the means of exchange again alter and the precarious superstructure of distribution tumbles disastrously to earth.

The problem we have suggested has countless angles. To the worker dependent upon a fixed income, to the widow

living on the proceeds of a trust fund, to the university resting upon a foundation of invested funds, to the preacher, the teacher, one and all they suffer as the power of the monetary unit declines. Each one has agreed to make definite contributions of service to the flow of social income. Each one expected to participate in the reapportionment on a certain basis, a basis intended to be *fixed*, by certain credentials. These credentials have in the meantime undergone a change. They have lost their significance so that actually a progressive change in the terms of the original compact has taken place, a change which has operated to the disadvantage of these classes.

On the other side we have certain groups realizing entirely unmerited gains. The debtor finds the burden of his debt shrinking as the value of the monetary unit declines. The tenant who possesses a long term lease finds his real rent diminishing. The outstanding obligations of a corporation or of the government tend to evaporate. The bulls have an unwonted assurance, for it is very difficult to make mistakes when you are reasonably certain that anything you buy will appreciate in price. The business man finds certain costs lagging behind the general rise in price so that his margin between total cost and price tends to expand. It is easier to make a profit and larger profits can be made.

This alteration in the value of our certificates disrupts our entire ratio of distribution. There is an insidious tampering with the process of rewarding private, corporate and national effort. The division of social income is in a state of disequilibrium and justice between individuals and groups has been contravened.

The problem has a larger aspect. Not only do we have spurious distribution of rewards between individuals within a nation but as between nations we find one defrauded and another favored and the injury of the one and the gain of the other is so ingeniously achieved, although the process is entirely automatic, that the nation which profits confuses its real gain with a fancied loss and the nation

which actually loses mistakes its real loss for an apparent gain.

As the medium of circulation drops in value the fact is registered by two barometers, one internal and the other external. The price level rising within the country measures the loss in internal purchasing power and the rise of exchange rates measures the loss in external purchasing power. There is a tendency for these two indicators to keep abreast of each other for as they separate forces are brought into play which will bring them together. In fact the greater the disparity between the two indices of value the greater the compensatory influence of the correctives.

Exchange rates as a general rule are more sensitive in registering changes in the value of a monetary unit than an index of prices. It is characteristic of the rate not only to record actual changes in value but to anticipate them. Thus the announcement of fresh recourse by the French Government to the complaisant aid of the Bank of France to fill the gap between revenue and expenditures was the signal for a fresh drop in the international price of the franc.⁸ In the marts of foreign trade the future diminished purchasing power of the franc was already being discounted. On the other hand the reiteration of determination to revalorize the franc coupled with the Spartan program of the fisc announced by a vigorous and determined government brings a rapid upward flight of the franc. In both cases future values have been anticipated and discounted. In both cases the foreign trade of the country suffers a serious disturbance.

We are interested at present in the influence of a rising exchange rate upon the real income of a country. Within the country prices do not display the same facile response that the exchange rate does. Certain contractual prices such as wages, rents, interest and taxes move slowly. Certain other prices are in vassalage to custom. The railways and public utilities find it extremely difficult to adjust their revenue to a higher level of expense. Consequently the in-

⁸This happened frequently during 1925 and 1926.

ternal purchasing power of money drops less rapidly than the exchange rate. Another way of putting this is to say that purchasing power parity remains above the exchange rate. To put it concretely the franc will purchase more if spent in France than it would if converted into cents and spent in the United States or a dollar will buy more if converted into francs and spent in France than it would if spent as a dollar in the United States.

Let us consider the case of France during 1923, 1924 and 1925. The ultimate purpose of this examination of evidence is to determine the effect of depreciation upon national income and the immediate purpose is to determine the influence of a falling currency upon imports and exports.

Before the war France was an importing nation, that is to say, her imports consistently exceeded her exports. For the four years 1910-1913 her visible imports exceeded her exports 23.3% on a value basis.⁴ This was at a time when France was on the gold standard and the stability of exchange as well as its consistency with the internal price level was assured. In 1923 this unfavorable balance had dropped to 7.15% and in 1924 this had changed to a favorable balance of 3.3% while in 1925 her exports exceeded her imports by 4.9%.⁵ During this same period we find purchasing power parity of the franc ranging above its exchange an average of 17.37% during 1923, 14.03% during 1924 and 16.80% during 1925.⁶

In practice this meant that travellers would find the cost of living lower in France than America, which they did. It would also mean that the French importer of foreign goods particularly from countries whose currencies were on a relatively stable basis would have to pay a larger number of francs to effect a given amount of purchases and that he could re-imburse himself only by charging a higher price. This was not always possible. Furthermore, the French importer in some instances made his contracts for future per-

⁴Based upon data in Commerce Year Book.

⁵Commerce Year Book.

⁶P.P.P. based Index of Statistique Generale and Bureau of Labor, exchange rates Federal Reserve Bulletin.

formance. He agreed to pay for the imports a definite price expressed in dollars. At the same time he engaged to deliver to domestic customers on a franc basis. When the time for execution came he discovered his receipts in francs unaltered while his payments required much more French currency. If the importer operates on a narrow margin he may well discover that his business yields him only diversion instead of livelihood. If the importer protects himself by insisting on a purchase contract in terms of francs it is the American exporter who 'holds the bag.' Sometimes protection can be secured through hedging. But hedging is in the nature of a bet with a speculator who specializes in risks. There must be a fair chance of the franc turning in favor of the risk bearing better. If it shows a very definite tendency to depreciate, a tendency which may be confirmed or confuted by the position and prospects of the fisc, it will be very difficult to find a broker who is willing to play on the other side. There is no particular satisfaction to be derived from betting against a reasonable certainty. Thus a depreciating currency acts as a distinct damper upon the import trade of a country.

On the other hand it is a stimulant of great power to the exporter. His returns in terms of domestic currency are greater than anticipated. He can undersell his rival who has the "benefit" of a stable currency. He is able to invade successfully, markets which had formerly been closed to him either because of prohibitive transport costs or special advantages which his rivals enjoyed. The demand for exportable goods is strong. Labor is fully employed and the country appears prosperous.

These phenomena, at least as far as they appeared in France, are matters of common knowledge. We see a country which normally shows an unfavorable merchandise balance reverse a historic trend and export more than she imports. Nor do our merchandise statistics tell a complete story. Tourists visited France during these years in unprecedented streams. To Americans a luxury of the rich had now come within reach of the middle

classes. The food consumed by these curious nomads as well as the services rendered to them are exports just as truly as the gloves and wines which leave France in ship bottoms.

Such a country presents an appearance of pseudo prosperity particularly if one considers the great hold which certain illusions of Mercantilist origin still have upon the public press. The chimera of Colbert, a perpetually favorable balance of trade seems in a fair way to be realized. The public weal is identified with a depreciating currency and to a natural disinclination to adopt measures, which, however heroic and sound and inevitable they may be, are found to cause some hardship and consequently cause the loss of some votes there are added positive reasons of weight. Obeisant politics and vacillating statesmanship join in continuing a state of affairs which like the ecstatic trance of the drug addict must somewhere and sometime call for compensation.

As a matter of fact the country is playing a losing game with itself. On an abstract value basis the goods exported must equal the goods imported plus the credits received. But the goods exported yield a decreasing return in foreign credits and it is these credits which are in turn used either for investment or for the purchase of commodities to be imported. In relation to the quantity of goods exported the quantity which can be imported by the use of the credits created by the exports decreases. This situation can be made clearer if we make some arbitrary assumptions for explanatory purposes. Among many other things France exports fine gloves. It imports some wheat. Let us assume that ordinarily a pair of gloves sells for five francs to the exporter and the importer can purchase a bushel of American wheat for a dollar or roughly for five francs. The franc starts on its toboggan slide. Prices in France rise twenty per cent and exchange drops to \$.125 or eight francs to the dollar. This is in accordance with the tendency of exchange rates to move more rapidly than internal prices noted above. When we started a pair of gloves could be exchanged for a

bushel of wheat. It now takes four pair of gloves to buy three bushels of wheat. The American finds that his wheat will exchange for more gloves and he is willing to buy more. The bargaining advantage is with him and his demand provides the stimulus which keeps the glove factories of France humming. There are no more idle glove workers. If the essence of prosperity is occupation and the lack of unemployment then the Frenchman has grown prosperous. However he is simply going thru the motions. His rewards seem to lack substance and do not convey the nourishment which activity of this kind usually brings with it. His illusory prosperity has the same relation to actual prosperity that shadow boxing has to the manly art. Prosperity is a relative term and connotes a real income richer in want satisfying goods and services than the ordinary. Somehow or other this does not seem to be the case with the Frenchman. On analysis he finds himself confronted by two alternatives. Either he will have to work one third harder or be satisfied with a quarter less wheat.

This situation would tend to correct itself if the franc stopped in its downward flight and stabilized but if it keeps on falling and the exchange rate remains two jumps ahead as it usually does the nation will find itself deprived of its fair share of social income.

It must in all fairness be conceded that this does not always work as indicated. A suspicion concerning the validity of the principle is raised by the fact that exports and imports do not remain equal or bear to each other the same relation that prevailed before the depreciation took place. To revert to our example. If all the gloves which France produces and exports are exchanged for wheat then imports must equal exports on a value basis although the ratio of exchange has altered to the disadvantage of France. Other considerations enter. In the first place France buys from abroad many other things besides wheat. In the second place she is not required to spend immediately the credits she has acquired thru the exportation of her own products. One half of the process of exchange may be suspended,

not indefinitely, but for a sufficient length of time to take advantage of such changes as may again occur in her favor. France, discovering that she can purchase her requirements only on a basis that is injurious to her economic income can temporarily curtail her wants. This may not be possible in the case of certain absolute necessities the demand for which is relatively inelastic but the commodities for which no effective substitute can be discovered are few and constitute but an unimportant factor in the total of trade. The Frenchman can therefore reduce his consumption of those imports which have risen in price relative to his own products. In such a situation the increase in exports has not resulted in a corresponding increase in imports. In fact the very cause which has operated as a stimulant to exportation has operated as a deterrent to importation. The excess credits are held abroad for future use.

This phenomenon incidentally serves to aggravate the disparity between the internal purchasing power of the franc and the exchange rate. The exchange rate is governed by two forces one ultimate and the other immediate. In the last resort the price paid for the franc must depend upon the amount of goods which the franc can buy making due allowances for cost of transportation, tariff duties and government restrictions and the extent to which exportable goods share the same relative cheapness in terms of francs as the total of commodities from whose average of prices the price level of France emerges. Keeping the above conditions in mind, the internal purchasing power of the monetary unit cannot long remain above the exchange rate since such a position establishes an incentive to the purchase of francs, their exchange in France for goods and services and their subsequent exportation to the country from which the original purchase of francs was made. The greater the disparity the greater the incentive to purchase for the degree of difference controls the amount of profit which the transaction will yield the operator. This increasing demand for the franc will tend to raise its price on the foreign exchange

marts until a rough equality between internal and external purchasing power is achieved.

The immediate factor which influences the exchange rate, a factor which is derived from the first is the supply of and demand for exchange. If the Frenchman with idle funds or capital invested in securities which pay a fixed rate of return finds that his investment power is evaporating thru the insidious process of depreciation he will protect himself in one of two ways or possibly both. If his loans upon being repaid represent less control over goods than when they were made he will expect a higher rate of interest in order to compensate for the reduced purchasing power of the units which are returned. Or he can take his funds and invest them in a country where the purchasing power of the unit remains relatively stable. In order to use this latter device he must first convert his francs into dollars or some other stable unit and invest them in the land into whose currency they have been converted. To the normal demand for stable exchange to be used for trade purposes we have added this special demand for temporary investment abroad. It is a case of capital fleeing from an unhealthy monetary climate. This increase in demand for stable currency will, other things being equal, tend to raise its price in terms of the depreciated unit or reduce the latter in terms of the former.

We have here an interminable concatenation of cause and effect which savors of the vicious circle.

To revert to the effect of depreciation upon the national income we find that although there are modifying factors operating thru the elasticity of demand and the ability of the Frenchman to deliberately curtail his consumption there is nevertheless this much truth in the principle laid down. To the extent that the Frenchman cannot deny himself the imported goods, to the extent that he cannot find a satisfactory substitute at a cheaper price and to the extent that he cannot postpone his requirements to some more favorable moment he is compelled to make exchanges in a ratio that impairs his real income.

Thus thru a change in the significance of our valuta certificates we find that not only are individual incomes altered but even the distributive shares of national incomes arising out of foreign trade are affected.

CHAPTER III

Deliberate Governmental Interference in the Value of the Standard Due to Three Causes—Inability to Secure Necessary Funds—Pressure of Classes for Special Favors—Desire to Achieve a Commendable Social Purpose.

HAVING determined that changes, particularly rapid changes, in the value of the monetary unit are viciously detrimental to the equitable distribution of individual, group and national incomes, let us seek some light on the causes of these changes.

In order to prevent at this time a digression that will carry us too far from our path, we will assume that the causes mentioned are causes and reserve for a later opportunity their definite establishment as such. We will in other words defer the request for their credentials. We will assume that an increase in the number of monetary units tends to raise prices and lower the exchange value of each unit. We use the word "tends" advisedly because we shall have occasion to see later that an increase in the quantity of money in circulation does not necessarily result in higher prices.

These increases may come about accidentally, automatically or deliberately. Let us consider the last first.

An increase comes about deliberately when the sovereign power of the state, operating thru a government or thru an instrument to whom the power has been delegated, chooses to increase the number of circulating certificates. Of all the causes of maladjusted incomes the deliberate exercise of the right to control the media of circulation by governments has been the most fertile. Changes due to increased gold production made possible thru the discovery of new methods of extraction or changes due to the accidental discovery of gold have been positively innocuous as

compared to the class malice, the group selfishness, the official incompetence or pusillanimity which have generated astronomical increases in currency. It is the governments whose fiscal exigencies have brought about the resort to inflation and whose printing presses have spewed forth the flood of larcenous monetary traitors who have deprived our original certificates of their character and esteem.

We have had since the war an audible group which has clamored for governmental control of the media of circulation to the exclusion of automatic and fortuitous factors. It is customary when an applicant applies for a position and alleges a capacity to perform the required task to inquire concerning his past experience and his success or failure in similar positions. This is the most obvious common sense and if it applies to individuals, it should certainly apply to governments, particularly when the task with which it is contemplated charging them is of such paramount importance. The record is open. Let us examine it.

We may classify these experiences according to the causes of intervention.

1. Inability to secure necessary funds.
2. Pressure of classes for special favors.
3. Desire to achieve a commendable social purpose, e. g., stability.

CHAPTER IV

Inability to Secure Necessary Revenue as a Cause of Inflation—The Case of the Revolting Colonies—The Case of Germany—Difficulty of Passing Judgment.

It is a moot question as to when a country is compelled to resort to inflation. The orthodox purists in public finance are unable to discover any justification for the use of the printing press in the place of the tax gatherer. Deliberate inflation is not a tax, for a tax is levied in accordance with a known principle and with ratios of exaction and methods of collection which are visible and susceptible to a rough approximation to justice. Even confiscation were better since the act of confiscation would most likely be directed against the classes which had the greatest wealth and there could be no uncertainty in the mind of the confiscating government or in that of the confiscatees as to the exact amount of the loss, its precise nature and time. Not so with inflation. One large class not only escapes all levy but actually shares in the tribute which the government imposes upon another large class. The government in securing its revenue thru this device deprives the creditor of his just dues and the friction in collection is so great that a substantial portion of the proceeds are consumed not in administration but in the readjustment of equities and accrues to the debtor classes. By a chain of reasoning which seems like inexorable logic, the government is indicted and condemned. The following is typical.

"It may be asked what else could have been done. If the continental money was a disguised tax, certainly an undisguised one would have been better. What the government required was army supplies. These were partly the products of the country and partly imported, the latter being paid for with the products of the country. The people did not avoid the necessity of parting

with their products by the device of issuing paper money. Except what was borrowed and begged abroad, the whole cost of the war was paid by the thirteen states out of their annual produce. Therefore it was a question merely of how the contributions should be levied. Regular taxation is always better than confiscation, because it is more economical and because it conserves the public morals, the confidence of the citizens in their own government, and the respect of the world."¹

The author quoted displays the customary inability of men who are wise after the event to place himself in the circumstances which gave birth to the policy he decries. In the first place a proper respect for the intelligence and integrity of the men who guided the precarious fortunes of the new state thru the perilous period of the Revolution should indicate a premise that they must have exhausted other and more commendable alternatives before resorting to a device so pregnant with social injustice. It is difficult to imagine the leaders of the day particularly men of the cast of Washington and Hamilton characterized by pronounced leanings toward aristocracy, of the best minds and most affluent estates, adopting a policy which would wipe out the obligation of the debtor and impoverish the creditor, a policy favored by the rabble and opposed by the wealthy and conservative particularly if taxation could save the day just as well. We must also remember that just taxation in those days meant chiefly a tax on consumption, a tax which is regressive in its incidence and would bear more heavily upon the lower orders than upon the higher. Adam Smith had raised his voice on behalf of taxation according to ability to pay, but much time intervened before his injunction was accepted and applied. If a tax could have been levied and collected, a tax which was just according to the standards of justice in taxation then prevalent, it would have fallen much more lightly upon the shoulders of the leaders and the well to do who guided the destinies of the young republic. Every reason of justice and state fortified by self-interest would have dictated the use of some other

¹ Horace White, *Money and Banking*, 5th Edition, pp. 103-104.

method of raising necessary revenues. There are two other general methods of raising funds and it is a matter of history that both were exhausted. The most commanding intelligence and most magnetic personality of the thirteen colonies spent practically all his time in Europe "begging" for loans with some measure of success but a measure that was entirely inadequate for the needs of his country. Borrowing at home was even more abortive. A few heroic figures placed their fortunes upon the altar of liberty. Their self-immolation fell short of the nation's requirements.

The story of the efforts of the Republic to finance itself thru taxation is pathetic. The colonists were by no means united in their struggle. The opposition to England by no means permeated the breasts of all Americans like a holy flame. Probably one half of the population was either actively opposed to the purpose and method of the Revolution or were entirely passive. Certainly that half was not likely to acquiesce in the exercise of that sovereign power by the new nation which would separate them from part of their incomes for the purpose of supporting a cause to which they were opposed or in which, at best, they had no interest. To some of the others whose patriotism had been audible, if not active, it was a distinct shock to find the Congress of the thirteen colonies attempting to commit the same sin which provoked their wrath against England. Their honored shibboleth had been "No taxation without representation." The last two words were an opportunist gesture. They constituted a plausible pretext. As a matter of tolerably well established fact, they were not interested in taxation either with or without representation. The colonists were intense individualists. They wanted a government which would let them alone. The atmosphere of the frontier bred a spirit of self-reliance, an initiative and an ability to solve their own problems which emancipated them from the need of an organized government. They were willing to concede the necessity for such government for certain elementary purposes such as protection against the Indians and the aggressions of foreign powers and the ad-

ministration of such justice as the individual himself could not provide. But beyond that the less government the better. The philosophy of social responsibility, of organized obligation, of deliberate collective control and consequent duty to furnish support had not yet penetrated their consciences or won acceptance. Why should they pay taxes? For whom should they furnish their goods? They could take care of themselves and they hoped others would do the same, but if they could not there was no clear categorical imperative calling upon them to contribute of their own substance.

Furthermore, there was no clear affinity between the government and the people. There was but limited identity of interest and responsibility between the government on the one hand and the people on the other. The government was a distinct, unrelated entity. If it represented any interests, they were those of the governing classes, the aristocratic high hats of Boston, the great land holders of the Hudson, the wealthy merchants of New York and Philadelphia and the lordly landed proprietors of the South. In no sense was a tax considered a payment made for a service. The service was not in evidence or so attenuated by division or taken for granted that no esteem attached to it.

It is not to be expected that a tax under such circumstances would be very fruitful. And such indeed was the case.

It is of course possible to rant and rave about a government breaking faith with its people, about undermining the sanctity of obligations, about impoverishing widows and orphans, and one may grant that all this is true. But when everything else has been tried and has failed and the government is confronted with the problem of self-preservation, it is very likely that considerations of honor, faith and justice will be tossed to the four winds and those measures embraced which will tend to retain the vital spark of life. This is precisely what the government of the thirteen colonies did and we find it difficult to blame them.

One other instance of justifiable, deliberate depreciation

has taken place much more recently and in the memories of most of us is still fresh. The most remarkable experience in post war inflation is that of Germany. There have been countries where depreciation approached the ultimate zero much more closely than in Germany. There have been countries in which the period of disturbance was more protracted and in which the hardships may have been much more serious. The case of Germany is noteworthy because she dropped from her high estate with such precipitous rapidity, because many individuals in other countries suffered, because the attention of the civilized world was focused upon this phenomenon and finally because it led to a most unusual experiment in international receivership.

Much has been said about the motives which were reputed to have actuated the leaders of post war Germany. It has been variously urged that it was a deliberate bid for sympathy, in order to escape the exacting penalties of the Versailles Treaty, that it was a case of financial hara kiri in order to prevent fulfillment of the terms of the peace treaty, that it was a deliberate plot of the industrialists to eliminate the middle classes and secure domination over the workers, that it was an astute attempt on the part of Germany to fleece guileless investors in foreign countries who had confidence in the recovery of the German mark and demonstrated that confidence by investment and that the funds so obtained would enable Germany to pay her reparations bill to the Allies. This simply suggests some of the least absurd theories which circulated in this and other countries.

All of these phantasies presuppose on the part of German statesmen a cold calculation and a possession of power which must, at least to them, be very flattering. In the years immediately following the armistice Germany stands before the world a thoroughly discredited nation. Her philosophy of expansion had been repudiated, her methods execrated and her ruling house exiled. Her soldiers returned, discouraged and exhausted. Moral restraint was loosed. The discipline which generations of paternalism had infused

into their spirit now disappeared. The poison of Bolshevism flowing unrestrained from the East permeated the land. A weak and uncertain government exercised such power as it dared. Who would pay taxes to such a government? Who would lend it funds, particularly when the prospects of repayment were so indefinite? Public opinion in other parts of the world would not tolerate as yet advances to a recent enemy. Germany had lost her colonies, Alsace and Lorraine. The Rhineland was occupied by hostile troops. Reparations confronted her like a dread spectre. Inability to comply with the insistent demands of the Allies would mean a closer approach to national extinction. There was nothing to do but give the printer the word which would send the mark to its ignominious doom.

In these two cases we can present a plausible defense for a practice which under other circumstances is indefensible. Even here opinion is divided. We have taken these up at some length in order to eliminate them from the consideration of other monetary excesses for which fewer if any extenuating circumstances can be pleaded.

We do not wish to appear arbitrary in our classification or condemn conduct whose motives we are not competent to weigh. We have so far considered two cases where a gap appeared between revenue and expenditure, where the expenditure was unavoidable and the necessary revenue unobtainable otherwise than thru the issue of fiat money. With very few exceptions practically all the currency orgies which took place after the war and some which have not yet² run their course are attributable to the fiscal embarrassment of governments.

In appraising motives we must determine not only if the expenditures were as a whole reasonable but also whether the budgetary deficits might not have been met in some other way than thru a resort to the issue of paper money. This problem does not yield an easy solution, since we are compelled to draw the line between the diffidence of the politician, solicitous for his tenure of office, and the recal-

² Latter part of 1926.

citance of the tax paying electorate. To the extent that it is due to the excessive regard of the office holder for his own political health and fortunes, we may regard it as avoidable and charge the guilt to the statesmen and near statesmen who have brought about the resort to increased currency issues. The politician presents to the student a peculiar character complex. He must depend upon the favor of the majority of voters for his position. This calls not so much for positive as for negative qualities. It is not the man who takes determined sides on every question who retains his office the longest. In fact it is to his interest to refrain from taking sides as long as possible. This necessity arises from a peculiarity of human nature. It is much easier for men to forget favors than injuries. Disappointments are nourished in the human breast whereas satisfactions leave their dim impressions and pass on. If gratitude there is, it is of the most ephemeral sort. For the public man it is safe to take a positive attitude only on questions where the entire crowd is with him. If public opinion is evenly divided and he essays the role of leadership, he will it is true gratify one half the voters but the other half will be antagonized. He may be a man of exceptional capacity and while in office may render valuable service to his constituents, but woe be to him if he has offended too many sacred prejudices or disappointed too many applicants for favors. The politician therefore is a product of evolution. In the struggle for existence nature has favored those who have been able to adapt themselves to their surroundings. The candidate for office therefore has developed a set of "opinions" of chameleon-like character. It is not unusual in these days to find a speaker seeking office preaching doctrine sweet to the Drys in one community whereas two days later in a community whose pulse he has carefully ascertained ahead of time he advocates modification or anything else which may appeal to his audience. He is simply acting on the principle of offending the least number. Obviously there is a limit on the length of time during which a man may remain in public office. It will be impossible for him during a period of years

to avoid decisions which alienate some votes, votes which remain alienated. A man starts in public life with a certain fund of "availability" for office. As his position on the burning questions of the day becomes known inroads are made on this potential vote getting energy until the time comes when he can no longer successfully stand for office. This kink in the psychology of the voter has given to the politics of republics a definite color. When a candidate's availability is weighed it is not his positive qualities which are thrown on the scale but rather his "defects." What have the voters against this man and what can the other party disclose against him? It is therefore not unusual to find some colorless personality serving as a successful candidate for office while a much more capable man is set aside because he has opposed the woman suffrage amendment or voted for the Volstead Act. James Bryce notes this same fact in discussing the character of presidential candidates. Men who have already achieved greatness rarely are selected for this candidacy by either major party.

Now let us see what relation all this has to the question of currency inflation and budgetary deficits. No man is fond of paying taxes. A tax in its very nature is a coercive act of government. It is defined as a compulsory exaction. No legislator therefore will vote for higher taxes if there is any possible way of avoiding it. Whatever may be said therefore of the soundness of paying for emergencies such as war at the time they occur, the politician may be said to have a constitutional inaptitude for taking the measures necessary to effect payment. A higher tax rate would bear down heavily on many of his constituents. The candidate who cherishes his office will defer the burden as long as possible. It is of no avail to point out to him that a war is not fought with money but with goods and services which the present generation then and there must supply. It cannot possibly be paid from the production of a future period. Battles are not won with guns which the grandsons of the participating soldiers are going to make. In spite of the inexorable logic of this fact the wise legislator will always postpone the

burden. We are not blaming him. We are simply analyzing his position and the forces which dictate his conduct.

Some day of course, we may attain that delightful millennium where a public will insist upon paying costs when they are incurred. Progress in this direction will depend upon the proper education of the tax paying public. It requires the development of a distinct social conscience, a sense of communal responsibility which will induce man to bear the burden of taxation as a necessary duty to be paid in the same fashion and for the same reason that he pays the grocer, the landlord, and the physician. As a general rule the Anglo-Saxons have made the greatest strides in this direction. The Englishman and the American bear a burden of taxation which is beyond the bounds of possibility in France, Spain or Italy. Their sense of social duty is far more highly developed than that of the Latin and is expressed in their willingness to pay a much heavier tax in proportion to their income.

It is this difference in the willingness of peoples to acquiesce in the demands which governments may make on their purses, which is likely to color our judgment when we attempt to weigh the responsibility for the hopeless financial impasse in which French finance floundered up to the middle of 1926.

This difference is well illustrated by the ratio of tax receipts to net expenditures of the principal belligerents.*

United States	36.0%
Great Britain	30.1%
France	17.0%
Italy	14.9%
Germany	11.7%

We have a host of countries who during the war and afterward resorted directly or indirectly to the printing press to meet expenditures which revenues were incapable of meeting. It was thru a deliberate exercise of sovereign power that this increase in currency took place. We compare these

*Gottlieb, L. R. *The Quarterly Journal of Economics*, Vol. XXXIV, No. 1, p. 494.

records with our own and tend to criticize them in the light of what we accomplished. The situations are not comparable. There is no common denominator and the search for one is futile. We are not willing to say that the resort to inflation might have been avoided because we avoided it.* On the other hand, we are not competent to say that it was inevitable or that these nations might have put their houses in order sooner than they did. France has been offered much gratuitous advice during the past few years by critics who knew exactly what was necessary if only France would do it.

The best we can do is to call these border line cases resting in a twilight zone between the inevitable and the unnecessary. In the human nature of economics they afford us valuable lessons.

*Speaking relatively.

CHAPTER V

Pressure of Classes as a Cause of Inflation—Early American Colonies—Paper Money and The Constitutional Assembly—Attempts to Resort to Bills of Credit after the Revolution—The Greenback Movement—The Present Situation.

ANOTHER cause which in the past has often provoked the interference of the government with the medium of exchange has been the pressure of classes for relief from burdens. The financial history of America is rich with the evidence of such pressure upon our legislatures. The original sin was committed by Massachusetts in 1690 after the disastrous termination of a trip under the leadership of Sir William Phipps, the object of which was the capture of Quebec. Like France and Germany more recently, the government seemed confident not only of the success of the expedition but also entertained the fond hope that the loot would be sufficient to pay the costs of the journey.¹

The returning soldiers were naturally disgruntled over the outcome of the crusade and were in no mood to tolerate a postponement of their pay to some indefinite date in the future. The General Court had attempted to float a loan to be redeemed by the expected plunder from Quebec, but the hardheaded investors of the Province entertained entirely different ideas concerning the present value of the prospective collateral still held by the Frenchmen in Quebec. The loan was not negotiated.

Finding the importunities of the returned soldiers not only embarrassing but possibly dangerous, the General Court authorized the issue of bills of credit not exceeding seven thousand pounds. We are interested at present particularly in motives and we extract the following from the order of the General Court.

¹ Davis, Andrew McFarland, ed. *Facts relating to the currency of the Massachusetts Bay, 1682-1720*. Boston, 1902, p. 8.

"... withal considering the present poverty and calamities of the country and (through scarcity of money) the want of an adequate measure of Commerce, whereby they are disadvantaged in making present payment as desired."²

This subtle narcotic was the precise remedy for their fiscal ailments and was hailed by the colonists with the same unalloyed delight that the thirsty traveller shows when he stumbles upon an oasis.

"What is the use of Coyned Silver? but to furnish a man with Credit, that he may obtain from his Neighbours those Commodities, which he hath occasion for? The Country in General Court, have Recognized or Acknowledged, a Debt of so many thousand pounds unto them that have been the servants of the Publick. . . . Now the Conveniences which the servants of the Publick, have had by them, have honestly paid the Countries Debts; and what could coyned Silver have done more?"³

"The Debtor Party (I am ashamed to mention it) being the prevailing Party in all our Depreciating-Paper-Money Colonies, do wickedly endeavor to delude the unthinking Multitude, by persuading them, that all Endeavours of the Governour, or Proposals and Schemes of private Societies, to introduce a Silver Medium, or a Credit upon a Silver Bottom, to prevent the honest and industrious Creditor from being defrauded; are Impositions upon the Liberty and Property of the People."⁴

"The Parties in Massachusetts Bay at present, are not the Loyal and Jacobite, the Governor and the Country, Whig and Tory, or any religious sectary denominations, but the Debtors and the Creditors. The Debtor side has had the ascendant ever since anno 1741 to the almost utter ruin of the country."⁵
Rhode Island

"for some years past the opposite parties are, they who are against multiplying a fallacious fraudulent paper currency, and they who encourage it for private iniquitous ends."⁶

"Our Paper Money Colonies have carried the Iniquity still

² *Ibid.* Quoted by Davis, pp. 10 and 11 from Massachusetts Court Records, Vol. 6, pp. 170, 171, under date of Dec. 10.

³ *Ibid.* Quoted by Davis, p. 14, from a letter to Elisha Hutchinson, Esq., Boston. 1691.

⁴ *A Discourse Concerning the Currencies of the British Plantations in America, etc.*, by William Douglass, reprinted in Economic Studies, published for American Economic Association, 1897, p. 295.

⁵ Douglass: *Summary of the British Settlements*, I, p. 535.

⁶ *Ibid.*, II, p. 86.

further; the Popular or Democratic Part of the Constitution are generally in Debt, and by their too great Weight or Influence in Elections, have made a depreciating Currency, a Tender for Contracts done many Years before; that is, they impose upon the Creditor side in private Contracts, which the most Despotick Powers never assumed. An Instance of a still further arbitrary Proceeding in relation to Paper Money was an Act of Assembly in New Jersey A. 1723, whereby Executions for Debts were stayed until Paper Money should be issued.

"The Mystery of the infatuation of our Colonies running Headlong into a depreciating Paper Currency may be this: In many of our Plantations of late Years, by bad Management and Extravagancies, the Majority of the People are become Debtors, hence their Elected Representation in the Legislature have a great Chance to be generally of Debtor Side; or in other Words, the Representatives being generally Freeholders, and many of them much in Debt: by large Emissions their Lands rise in Denomination Value while their Debts become really less, and the Creditor is defrauded in Part of his Debt. Thus our Colonies have defrauded more in a few Years, than bad Administrations in Europe have formerly done in some Centuries."⁷

Douglass makes very acute observations on the effects of inflation. The advocates of inflation attempting to persuade the home government from interference in the emission of paper currency by the Colonies argue that it is in the interest of England to permit this since the silver in the colonies is exported and usually goes to England thereby encouraging English exports and increasing the supply of the precious metal at home. This apparent gain to the mother country must likewise be the loss of the Colonies. He noticed also that wages and salaries changed less rapidly than general prices and that the worker bore the loss. He appreciated that the value of money depended upon supply and demand and that the total value of the medium is by no means enhanced by additional emissions.⁸

The pressure of classes for cheap money continues after the Revolution. One of the objects of Shays and his tatterdemalion hosts was an abundant supply of legal tender currency which would emancipate them all from the bondage

⁷ William Douglass, *op. cit.*, pp. 320-321.

⁸ *Ibid.* pp. 322-329.

of debt. During that perilous interregnum the institution of private property trembled before the squalls and tempests of the ignorant but audible desires of the bankrupt and the poor. General Knox in writing to Washington in the fall of 1786 comments strikingly on the spread of a spirit which to-day we would call "bolshevism."

"In a word they are determined to annihilate all debts public and private and have agrarian laws, which are easily effected by means of unfunded paper money which shall be a tender in all cases whatever."*

In spite of the disastrous experience of the colonies with bills of credit and the sad state to which the continentals had fallen the Constitutional Convention did not lack staunch supporters of paper money. The matter of endowing the federal government with the power to issue bills of credit is of particular interest to us. Two proposals were laid before the convention, one by Randolph and the other by Pinckney. Randolph omitted any mention of coinage while Pinckney included the power of coinage.¹⁰ The matter was referred to a committee which submitted a draft of Article VII the pertinent part of which is as follows: Art. VII, Sec. 1. "The legislature of the United States shall have the power

8) To borrow money and emit bills on the credit of the United States.

Art. XIII. "No State, without the consent of the Legislature of the United States, shall emit bills of credit, or make anything but specie a tender in payment of debts,"

A debate then followed concerning the wisdom of leaving the government in possession of the power to issue paper money as the above quoted clause clearly does, or striking that part of the clause out without making any mention of the matter of paper money or inserting a positive prohibition against the issue of notes. Two reasons finally deter-

* Quoted by James M. Beck. *The Constitution of the United States*, p. 47.

¹⁰ *Elliot's Debates*, I, p. 143.

mined a selection of the middle course. The first consisted of the feeling that future difficulties could not be foreseen and it would be foolhardy to close the door absolutely against the emission of bills since some contingency might arise where they would be necessary. As Mr. Mason of Virginia expressed it,

"Though he had a mortal hatred to paper money, yet, as he could not foresee all emergencies, he was unwilling to tie the hands of the legislature. He observed that the late war could not have been carried on, had such a prohibition existed."¹¹

The second reason was the fear that the inclusion of a positive prohibition might alienate the support of classes which would be necessary in the campaign for the adoption of the constitution. Presumably they had in mind the recent violent demonstrations of Shays and his followers, the mobbing of a New Hampshire legislature which had refused to pass a legal tender bill and the wholesale repudiation of debts in Rhode Island, that temperamental terror of the confederation.

Mr. Mercer who confessed himself a moderate friend of paper money was willing under the circumstances to omit the provision for bills of credit but thought it unwise to include a specific denial.

"It was impolitic, also, to excite to opposition of all those who were friends to paper money. The people of property would be sure to be on the side of the plan, and it was impolitic to purchase their further attachment with the loss of the opposite class of citizens."¹²

The original Article XIII previously quoted left the door open to the issue of bills of credit by the states, provided they first secured the consent of the federal legislature. The dread of paper money was so general however at least among the representatives who were then deliberating that the great majority speedily voted to incorporate an absolute denial of the power to emit bills of credit rather than a condi-

¹¹ *Elliot's Debates*, V, p. 434.

¹² *Idem*.

tional denial and it was unanimously decided to prohibit the right of the states to make anything but specie a tender in payment of debts. In spite of the general feeling we find Mr. Gorham of Massachusetts expressing himself as follows,

"the purpose would be as well secured by the provision of article 13, which makes the consent of the general legislature necessary; and that, in that mode, no opposition would be excited; whereas, an absolute prohibition of paper money would rouse the most desperate opposition from its partisans."¹³

Certain facts must be taken into consideration in weighing the importance of these sentiments. It is well to remember that the right of suffrage at this time was restricted to the property holding classes and that the "common people" actually had little voice in the decisions which effected them. The convention consisted primarily of men who were the "best minds" and who incidentally had considerable property interests. The desire to protect these and to take effective protective measures against such menaces as that represented by Shays' uprising constituted compelling motives for the convocation of an assembly for the purpose of effecting a closer union. The delegates who met were therefore not representative in the modern sense. They spoke for and on behalf of the better classes. It is significant that even among men of this character we find a desire to conciliate the cheap money partisans. It reflects rather strikingly the power of the latter and the fear which they had inspired. Speaking of the adoption of the Constitution, James M. Bryce voices the same idea.

"Had the decision been left to what is now called 'the voice of the people,' that is, to the mass of the citizens all over the country, voting at the polls, the voice of the people would probably have pronounced against the Constitution. . . . The counsels of the wise prevailed over the prepossessions of the multitude."¹⁴

¹³ *Elliot's Debates*, V, p. 484.

¹⁴ *The American Commonwealth*, Revised edition, Macmillan Company, New York, 1919, Vol. I, p. 26.

The ghost of a paper flood was by no means permanently laid. Missouri made a rather clumsy effort to evade the application of the constitutional prohibition against the issue of notes in 1821. It issued loan certificates signed by state officials and made them payable for public dues and receivable by public creditors. The supreme Court passed upon this in *Craig v. Missouri* (4 Pet. 425), and held that the State of Missouri could not issue these "certificates of indebtedness." The court in explaining the existence of the clause in the Constitution said:

"Such a medium (bills of credit) has been always liable to considerable fluctuation. Its value is continually changing, and these changes, often great and sudden, expose individuals to immense loss, are the sources of ruinous speculations, and destroy all confidence between man and man. To cut up this mischief by the roots, a mischief which was felt through the United States, and which deeply affected the interest and prosperity of all, the people declared in their Constitution that no State shall emit bills of credit. If the prohibition means anything, if the words are not empty sounds, it must comprehend the emission of any paper medium by a State government for the purpose of common circulation."

The good hard headed common sense of Marshall speaks in this decision. His careful regard for the consequences and his solicitude for the strength of the central government were not shared by his immediate successor.

In 1820 the State of Kentucky chartered the Bank of the Commonwealth of Kentucky. The stock was owned by the state, the officers were elected by the State legislature and their salaries paid by the same body. The notes of the bank were to be loaned on the security of mortgages to enable meritorious private persons to pay their "just and honest debts." Like the notes of the State of Missouri they could be used in the payment of taxes and other public dues. Were these notes bills of credit within the meaning of the Constitution? The Supreme Court was requested to answer the question in the case of *Briscoe v. Bank of Kentucky* (11 Pet. 318). The case reached the court in 1834. Before it

could be decided Marshall was taken ill and died. Jackson appointed Tawney as his successor and at the same time appointed five other associate justices, all Democrats. It is needless to say that the State of Kentucky had acted entirely within its rights. This pernicious principle was sustained in later cases, (*Curran v. Arkansas*, 15 How. 318) (*Darrington v. Bank of Alabama*, 13 How. 16).

This force straining to alter the real status of the debtor runs through our entire history, like a sinister yellow thread. Much of the opposition to the First and Second United States bank was founded upon the restrictions which those institutions placed upon the reckless and extravagant methods of wildcat banks. The citizens of the hinterland experienced greater difficulty in securing accommodation and found the pinch of debt more painful. With the scuttling of the Second United States Bank the lid was off and currency chaos ruled in the greater part of the country.

We will not review the experiences of the Civil War. The facts are well known.

Early efforts after the Civil War to undo the effects of the issue of the greenbacks resulted in the passage of the act of April 12, 1866, which provided for the gradual retirement of the currency issued under the stress of the war. The representatives had voted without ascertaining the pulse of their constituents who still nourished the fatuous delusion that an ample supply of money and prosperity were causally inseparable. In February of 1868 the act mentioned above was suspended.

This, however, was simply pressure of a negative sort. Its purpose was to prevent the reduction of the currency already outstanding and as food for the greenbackers was not sufficiently nourishing. The crisis of 1873 and the period of depression which followed provided the stimulus which turned the attention of men to the formation of a national greenback party. At a preliminary conference late in 1874 it was decided that many disgruntled elements could be attracted to a banner for cheap money. The conference announced that the "solution of the money question more

deeply affects the material interests of the people than any other questions in issue before the people," that the national debt should be paid in greenbacks and that bonds bearing a low rate of interest should be issued together with legal tender currency, the two to be freely interconvertible.¹⁵ Representatives from most of the states attended the convention and the party was known as the Greenback party. The following year this party joined forces with a labor group whose objects were closely related to that of the Greenback party. The convention held in 1876 was fairly representative and contained not only farmers and workingmen but merchants, lawyers and journalists. Their platform is significant in that it urged the expansion of the medium of exchange to relieve industrial depression by raising the general level of prices. Specifically it called for the repeal of the specie resumption act and the maintenance of the greenbacks in circulation. With little organization and few funds it polled about 100,000 votes in the national elections of 1876.¹⁶

The labor element had so far not been an important factor in the Greenback party but after the great disastrous strikes of 1877, the leaders of labor looked about for an instrument through which they could register their protests. In September of 1877 a workingmen's state convention meeting in Columbus organized the National Party with a platform that was almost identical with that of the Greenback Party. It omitted the interconvertible bond feature but demanded the retention of the greenbacks without any contraction, the substitution of legal tender notes for national bank notes and the re-opening of the mints to the free coinage of silver. This Greenback Labor party made substantial gains in the state elections, in Ohio over 17,000; New York, 20,000; Pennsylvania almost 53,000; while in some of the western states it polled as much as fifteen per cent of the total vote. In the congressional election of 1878 the green-

¹⁵ *History of Labour in the United States*, Commons and Associates, p. 168.

¹⁶ *Ibid.*, pp. 170-171.

back vote amounted to more than a million, and fourteen representatives were sent to Congress.¹⁷

For the next twenty five years the medium of exchange was the burning issue of American politics. The Democratic party assumed the mantle of the Greenbackers and demanded the free coinage of silver. An unusual cocomitance of circumstances accentuated the distress of the debtors and added strength to their demands for relief. This is a period in which three major circumstances conspire to bring about a fall in prices, the worst effects of which are felt by the farmers and the settlers of the newly developed regions of the west. The rapid occupation of new lands has the effect of increasing the output of agricultural products at a rate more rapid than the growth of the demand for those products and if other things had remained the same, we might have expected a drop in prices of foodstuffs as a result of this single factor. Unfortunately other conditions at this time altered in such a way as to aggravate the fall. We may consider our equation of exchange as an equality between the amount of purchasing power offered at any time and the amount of goods for sale. We have already called attention to the fact that the goods side was increasing due to the rapid exploitation of the rich agricultural lands of the west. On the other side we find a decrease in the rate of production of gold and at the same time increased bidding for the existing gold supply as a basis for currency. Gold production declines during this period while many important nations abandon silver or bimetallism and found their currencies on gold. Through some malicious destiny these forces seem to unite and impose their vicious effects upon the farmer of the United States. The prices of his products shrink while the real burden of his debts expands and he finds himself clamped helplessly between the upper jaw of declining returns and the lower jaw of increasing payments. He struggles desperately for a remedy and feels that he has found it in the corruption of the standard of payment. It may be said for him that his empirical instincts in this case

¹⁷ *Ibid.*, pp. 240-246.

did not deceive him and that the re-opening of the mints to the free coinage of silver would probably have improved his position although it may have ultimately impaired the equities of other groups and brought much mischief to the country. With the improvement in the position of the farmer which the opening of the present century brought and the long slow rise in prices culminating in the rapid flight of the price level during the war, the issue of cheap money disappears from the stage of American politics. It need not be supposed that it is dead. Only recently the senator of a western state proposed a measure compelling the Federal Reserve Banks to keep their interest charges within three per cent and to place funds at a rate of 5 per cent at the disposal of the farmer.¹⁸ President Fitzwater of the Farm Labor Union comes out very bluntly with the statement:

"The Farm Labor Union stands for cheap money and plenty of it."¹⁹

Another spokesman of the same class is Mr. Western Starr representing the Farm Labor Party. He is opposed to all measures for price control only because he knows that the wrong party will obtain control and use this power to further oppress the downtrodden. Mr. Starr nourishes the belief that the deflation in 1920 and 1921 was the consequence of a gigantic conspiracy on the part of the creditor classes to increase the equity behind their claims.

"The law of supply and demand had been utterly abolished until the time came to spring the trap, and the word was passed. The prize was a 15 to 20 per cent scalp on \$26,000,000,000 of Government bonds—the equities in \$80,000,000,000 of mortgaged homes and farms, the stocks and bonds of \$50,000,000,000 of corporate industrial and public-utility plants, the daily wages of 40,000,000 industrial workers, and the produce of more than 6,500,000 farms and ranches. It was a matter purely of credit control."²⁰

¹⁸ The United States Daily, Nov. 14, 1927, p. 7.

¹⁹ Journal of the American Bankers Association, May, 1923, p. 724.

²⁰ Goldborough Bill Hearings, p. 132.

In support of this theory Mr. Starr furnishes an illustration provided during 1908 when he was campaigning in the State of Kansas. He was the guest of a German farmer whose good wife complained of the sudden drop in the price of hogs. On one Saturday they were offered five cents a pound and on the following Monday they had difficulty in securing a bid of one and a half cents a pound. And she extends this query to her guest.

"Tell me what made that; who did it?"

Mr. Starr found the answer very simple.

"The United States Steel Trust wanted to get control of its only competitor, the Tennessee Coal & Iron Co., and they began months before by drawing \$125,000,000 of gold out of London reserves and bringing it over to the United States to protect their position and start the panic on the other side of the ocean. The panic started over there and came over here. That panic was the most thoroughly segregated in its entire environment and all its circumstances of any that we have had: and we have had sixteen of them since we organized this Government: every one of them was caused by exactly the same cause that pulled the credit string on the trap. There was not a hog in America or a chicken or anything that could be offered for sale, nor a day's labor that did not suffer in the same way, though, perhaps, not in the same proportion, all because of the private power of credit control."²¹

Another specious advocate with a pseudo-scientific presentation who speaks for class interests is Dr. George Shibley. The money power, the creditor class, have aimed constantly at deflation in order to increase the real value of the debts due them and by the same token the burden upon the debtors. The business interests on the other hand have always been interested in inflation and the purpose of both has been to rob the masses.²²

The Federal Reserve Board has been actuated by political motives in its regulation of the discount rate. In 1922 and 1924 opportune rises in the price level were obligingly provided by the Board in order to stimulate business and employ the jobless and thus make the retention of power by the party in control more certain.²³

²¹ *Ibid.*, p. 134.

²² *Stabilization Hearings*, p. 26.

²³ *Ibid.*, p. 18.

Shibley in a brief review of the central banks of Europe attempts to create the impression that in almost every instance the control of the bank rate had to be taken from the private bankers and vested in the government, because of the unbridled selfishness and incompetence of the former. The doleful effects of the government's failure to assume its responsibility in this country is described in the following language which also illuminates the scientific qualities of this witness.

"But in the United States of America from the time of the founding of the Republic until the enactment of the Federal reserve law in 1913, the control of the bank rate was in the bankers. That bankers' control wrought havoc beyond words to describe. While the leading nations of Europe in close competition, in every way, were forced in self-defense to take the control of the bank rate from the bankers, in the United States, far removed from the danger of invasion, the bankers wrought havoc, being fully in control of both the Government and the bank rate nearly all of the time from 1844 to the election of 1912—the year of the people's peaceful revolution."²⁴

At present we can afford to be amused by demagogic patter of this sort, but a prolonged depression the incidence of whose distress fell upon any particular class would revive the issue in all its pristine intensity. The above are some self-appointed torch bearers ready to carry the holy flame.

This whole question of class pressure for a change in the means of payment is possibly a problem for the social pathologist rather than the economist.²⁵ It is born of the desire of a class to secure a special advantage in the distribution of the economic income stream or a favorable change in the equities in existing property. This pressure is a particularly virile force in new communities where a young generation truculently resists the claims of previous generations expressed through their debts. While progress tends to modify this resentment, it is ever present and is a living

²⁴ Goldsborough Bill Hearings, p. 91.

²⁵ For a development of this idea see *Money Inflation in the United States*, Murray Shipley Wildman. G. P. Putnam's Sons, New York and London, 1906.

fact with which every statesman must contend. Before we rashly embark upon extravagant schemes of monetary reform it were well that we be strictly sober and appreciate the destructive power of this pressure. Let us not blithely open another Pandora's box.

CHAPTER VI

Disinterested Attempts to Achieve a Commendable Social Purpose—No Attempts Successful—Objects General and Vague—Division of Counsel.

STABILIZATION is the third general occasion for governmental interference with the standard and constitutes the subject of this work. So far such attempts have been academic and no government has yet tried deliberately to manipulate the standard for the purpose of stabilizing prices or business or mitigating industrial conflicts or for any other generally commendable purpose. If we consider the many experiments, by which society through a method of trial and error has finally adopted the gold standard as the standard which best discharges the functions of money, as deliberate attempts to secure stability, then we must except practically the entire monetary experience of mankind from the above statement. This experience on the whole has been a crude inductive demonstration exceedingly slow in its inception and changes and exceedingly tardy and at times somewhat uncertain in the verdict which it elicited. There are definite reasons for the unsatisfactory state of our third type of interference. In the first place the object is broad and humanitarian and the benefits rather general and remote, and furthermore somewhat doubtful both of realization and effect. Such is not the case when the government issues an order to the printer for the purpose of paying bills which could not be met in any other way. The end here is definite and certain. There is no doubt that the government will be able to emancipate itself, at least temporarily, from fiscal embarrassment. Since that is the end the expedient justifies itself immediately. Likewise when debtors clamor for easy money, the benefits are direct, tangible and immediate. Nothing which has yet been said in

favor of a stable price level has succeeded in provoking the intense emotional pressure felt by a harassed finance minister as he reaches for the central bank or equalled the incubus of despair which drives the burdened debtor to clamor for relief. The dramatization of the plight of the poor working woman deprived of a merited increase in her savings by a depreciation of the standard is a one half of one per cent potion in comparison.

Another reason why intervention on account of our third motive has never occurred is that the doctors have not been able to agree on the precise method of intervention. When a yawning deficit confronts the Treasury and taxation and borrowing have yielded the limit, there is but a single final alternative and the pages of history need not be scanned or the opinions of scholars sought to discover it. When the debtor staggers under his load he need not consult the proceedings of learned societies or weigh the merits of a dozen different expedients for a delightful narcotic is at hand if only the government will acquiesce. His job therefore is to induce that government to acquiesce. Here we have two clear cut objectives with very definite means of realizing them and there need be no division of counsels.

What a contrast the problem of stabilization presents! Jevons advocated the use of two metals in a given ratio and argued that if gold and silver were used the fluctuations of one would tend to counteract the movements of the other.¹ Bimetallism received more political support and came nearer to receiving a real trial than any of the other proposals which we are about to mention. The subject has been profusely discussed and it is not our purpose here to revive a buried issue.² Professor Marshall suggested union of the two metals in a given ratio in the same coin, so that it would be impossible for one metal to drive the other out of circula-

¹ *Investigations in Currency and Finance*, London, Macmillan, 1884, pp. 331-333.

² See *History of Bimetallism in the United States*, J. Laurence Laughlin, 4th edition, 1897; *Bimetallism in Europe*, E. Atkinson, Ex. Doc., 34, 50th Congress, 1st Session, 1887.

tion.³ The same economist, together with a committee of the British Association for the Advancement of Science, proposed a tabular standard in effect whereby contracts could be made on an index number basis.⁴ This idea is applied by Fisher in the Rand Kardex Co. stabilized debenture bonds so that the interest paid each year and the amount with which the bonds are redeemed depends upon an index number.⁵ Fisher suggests that the coinage of gold be stopped and that the monetary units be redeemed in amounts of gold which will be made to vary in such a way that the purchasing power of money will remain constant.⁶ Wicksell and Cassel insist that stability may be attained by simply regulating the central bank rate.⁷ John Maynard Keynes has similar faith in the efficacy of the discount rate as a corrective or preventative of fluctuations.⁸ The Genoa Conference pinned its faith to international co-operation in the control of the demand for gold.⁹ Hawtrey advocates a universalized gold exchange standard which must also depend upon the co-operation of other nations for its success.¹⁰ Lehfeldt would have the world unite to acquire common possession of all the gold mines in the world in order to control the supply of gold.¹¹ Carl Snyder would co-ordinate the demand for gold and limit the amount of gold which would be eligible to serve as reserves in accordance with the state of the price level.¹² The chief thing which these plans have in common is their lack of agreement with each

³ F. Y. Edgeworth, *Thoughts on Monetary Reform*, Economic Journal, September, 1895, p. 448.

⁴ Report of the British Association for the Advancement of Science, 1890, p. 488.

⁵ Stabilisation Hearings, pp. 58-61.

⁶ Irving Fisher, *Stabilising the Dollar*, Macmillan, New York, 1920, p. 104.

⁷ Knut Wicksell, *The Influence of the Rate of Interest on Prices*, The Economic Journal, Vol. XVII, p. 213; Gustav Cassel, *Das Stabilisierungs Problem*, G. A. Gloeckner, Leipzig, 1926, p. 44.

⁸ J. M. Keynes, *Monetary Reform*, Harcourt, Brace and Company, New York, 1924, p. 205.

⁹ Federal Reserve Bulletin, June, 1922, pp. 678-679.

¹⁰ Hawtrey, R. G., *Monetary Reconstruction*, Longmans, Green and Co., London, 1923, pp. 61-62.

¹¹ Stabilisation Hearings, pp. 1046-1049.

¹² Carl Snyder, *The Stabilisation of Gold; A Plan*, American Economic Review, 1923, pp. 276-285.

other. However this disparity is more apparent than real and in order to do full justice to each one we shall let them tell their stories in their own words so far as our purpose requires and our space permits.

PART II
STABILIZATION PLANS

CHAPTER VII

The Stabilized Dollar of Irving Fisher—Early Reception of the Plan—Course of the Movement Up to 1920-1921.

No man has done so much to stimulate thinking and discussion on the general subject of price levels, their evils and possible cure as Professor Irving Fisher. Were it not for Fisher many people who now speak familiarly of such things as index numbers and inflation and deflation would be utterly ignorant of price theory and price problems except in the most superficial sense. His efforts have provided a popular education in monetary theory to thousands. Even his opponents owe him a debt because his thorough preparation of the ground has made their own positions more comprehensible. Furthermore, his efforts have been inspired by a singular highmindedness, by a sympathetic social solicitude and by an extraordinary unselfishness. There has been such a complete absence of all attempts to exploit a case for self-promotion, such a freedom from the taint of advocacy for group advantage, that Fisher is assured an abiding place on the tabulæ of history as a sincere advocate of a great cause. Although opposed to his proposals we yield to none in our admiration for the man, for his methods and for his motives.

For the plan which Fisher advances he refuses, with characteristic generosity, to take credit. He grants, for instance, that he was directly anticipated by at least three writers, Aneurin Williams in 1892,¹ J. Allen Smith in 1896,² and by D. J. Tinnes in 1896.³ Fisher's own statement of the plan made its appearance as a chapter in his book "The Purchasing Power of Money" published in 1911. Active discussion of

¹ A "Fixed Value of Bullion" Standard, *Economic Journal*, London, June, 1892, pp. 280-289.

² A Multiple Money Standard, *The Annals of the American Academy of Political and Social Science*, March, 1896, pp. 1-60.

³ An Ideal Measure of Value, *The Adrian Guardian*, Nov. 16, 1896.

the plan was precipitated by a report on the cost of living made by him to the Congress of Chambers of Commerce in Boston, September, 1912, which was printed in the *Independent*, September, 1912.⁴ The *Commercial and Financial Chronicle* was among the first to align itself with the opposition. In a satiric editorial⁵ it ridicules some of the claims of the plan, is skeptical about the quantity theory and believes that rising prices are the result of scarcity of goods as well as increased production of gold. It does not believe that the necessary international cooperation could be realized or that a single nation could successfully sustain the plan.⁶ It also claims that Fisher is sacrificing the utility of gold as a standard of value.⁷ The treatment on the whole is hostile and shows some misunderstanding of the plan, e.g., it does not seem to comprehend the difference between a general price level and particular prices.⁸ The editor does not think it possible for gold coins to circulate if they are redeemable in more gold than they contained since there would be a rush for redemption.⁹ He also holds that the seigniorage profits would be coined and this would destroy the effectiveness of the plan;¹⁰ that a stable unit of value must not necessarily retain the same purchasing power and that the two ideas are entirely different. The dollar should remain stable in value in order to make it possible to measure changes in the values of other commodities.¹¹ Finally he voices "the accepted belief that the more gold a country can retain at home for its own use and for reserves, the better off it will be."¹² It is difficult in spots to follow the editor and while Fisher makes able rejoinders they fail to make any impression on the editor, which is not the fault of Fisher. He has decidedly the best of the argument. At the meeting of the American Economic Association in December of 1912, the plan was discussed and some of the objections raised in this book were on that occasion anti-

⁴ Pp. 700-706.

⁵ Oct. 5, 1912, pp. 852-853, *Commercial and Financial Chronicle*.

⁶ *Ibid.*, Oct. 26, 1912, p. 1090.

⁷ *Ibid.*, p. 1091.

⁸ *Idem.*

⁹ *Ibid.*, Nov. 16, 1912, p. 1303.

¹⁰ *Ibid.*, p. 1304.

¹¹ *Idem.*

¹² *Ibid.*, p. 1305.

pated. David Kinley¹³ asserted that no monetary unit could be so manipulated as to maintain a fixed ratio between goods. Money is a medium of exchange and simply facilitates the exchange of goods. These goods change in value and therefore in their relation to each other. It is impossible to expect the denominator of exchange to maintain the ratio of exchange and that is exactly what a dollar stabilized on the basis of an index number would attempt.¹⁴ The Fisher plan, he stated, depends upon the validity of the quantity theory, upon the functional relation of credit to money and also on the isolated influence of an increase or decrease of money upon prices.¹⁵ A readjustment of the general price level will force a readjustment of particular prices and this cannot be done without harm.¹⁶

Albert C. Whitaker¹⁷ approves the whole body of the monetary theory on which the plan rests but says he would be very much surprised if anyone but a quantity theorist ever supported the plan.¹⁸ Although theoretically sound the plan lacks political feasibility. He raises a question as to the connection between a 1 per cent seigniorage and a 1 per cent change in the price level and indicates that these are entirely different quantities. Will a five per cent rise in the price level require a five, ten or fifteen per cent seigniorage?¹⁹ He also speaks of Fisher "enthusiastically neglecting" international complications. Foreign exchange difficulties are also emphasized by Professor E. W. Kemmerer.

In May of the same year Professor Taussig makes an excellent theoretical analysis of the plan.²⁰ He draws attention to the looseness of the connection between the quantity of money and prices.²¹ There is a lag between increases in the quantity of money and changes in the price level. He concedes that if the former is increased sufficiently the latter

¹³ *Objections to Monetary Standard Based on Index Numbers*—The American Economic Review, March, 1913, pp. 1-19.

¹⁴ *Ibid.*, pp. 6-7.

¹⁵ *Ibid.*, p. 10.

¹⁶ *Ibid.*, p. 14.

¹⁷ American Economic Review, Supplement, March, 1913, Discussion of Plan.

¹⁸ *Ibid.*, p. 32.

¹⁹ *Ibid.*, p. 33.

²⁰ The Quarterly Journal of Economics, May, 1913, *The Plan for a Compensated Dollar*, pp. 401-416.

²¹ *Ibid.*, p. 403.

must change but it is impossible to tell when such a change will take place and to what extent. The plan would have little or no effect on short time changes in the price level nor would commercial crises be abated. ". . . the only thing that would be accomplished would be the maintenance over periods of years,—ten years or more,—very likely through some sharp and catastrophic adjustments, of an approximation to a level course of prices." ²² He scouts the possibility of the necessary international cooperation. ²³ Among others who voice objections at this time are J. M. Clark ²⁴ and E. M. Patterson. ²⁵

The plan simmered during the war but agitation brought it for consideration before the meeting of the American Bankers Association at Washington in October, 1920. The committee to whom the plan was referred turned in an adverse report expressing faith in the gold standard and citing the opposition to the plan of such noted economists as Dr. Carl C. Plehn, professor of economics, University of California; Dr. E. R. A. Seligman, professor of economics, Columbia University; Dr. David Kinley, president of the University of Illinois; Dr. B. M. Anderson, Jr., economist of the Chase National Bank in New York; Dr. H. P. Willis, professor of banking at Columbia University and formerly secretary of the Federal Reserve Board; Dr. J. H. Hollander, professor of economics at Johns Hopkins University; Dr. F. W. Taussig, professor of economics, Harvard University; Dr. J. L. Laughlin, emeritus professor of economics, Chicago University, and Dr. David Friday, professor of economics, University of Michigan. ²⁶

On the other side it were best to use Fisher's own words.

"In the spring of 1918 a Committee of the American Economic Association, on the Purchasing Power of Money in relation to the

²² *Ibid.*, p. 407.

²³ *Ibid.*, pp. 407-408.

²⁴ *Possible Complications of the Compensated Dollar*. The American Economic Review, September, 1913, pp. 576-588.

²⁵ *Objections to a Compensated Dollar*, The American Economic Review, September, 1913, pp. 863-875.

²⁶ A. Barton Hepburn—*A History of Currency in the United States*, The Macmillan Company, New York, 1924, pp. 477-479.

War, indorsed the principle of stabilization and commended the subject to the earnest attention of statesmen and economists.

"By this time academic economists had been largely won over to the idea, it having run the gauntlet of their criticism for several years. The general support of economists marks the first milestone in the progress of the idea."²⁷

This statement may be compared with the opinion of the committee of the American Bankers Association previously cited. It was made within a year of the latter. However, the plan has made progress and won support in many quarters.

We must interrupt our story at this point to take up the general movement of stabilization. Up to this time we may say that stabilization as a movement was identified with Irving Fisher and that the plan of stabilization was that advocated by him. The post-war boom and the consequent depression gave a tremendous fillup to the entire subject and the advocates of reform were furnished with splendid ammunition. Digression is necessary therefore for a short account of this economic upheaval and the forces which it loosed.

²⁷ *Stabilizing the Dollar*, op. cit., pp. vii-viii.

CHAPTER VIII

Post-War Inflation and Deflation—Their Relation to Stabilization Plans—Criticism of Federal Reserve Policy—Attempt to Attribute Excessive Power to the Federal Reserve Board—Such Power a Source of Danger to the Board—Statistical Evidence—Denial by Board.

THIS is not the proper place to commence an examination of the business cycle. We are interested in the post-war cycle because of the dramatic rapidity with which the various phases developed, because of the wide spread of its movement and because of the catclysmic nature of the effects. We are also interested in it because the movement from optimism, promotion, and speculation to pessimism, depression and stagnation was attributed to the deliberate control of the Federal Reserve Board and from this apparent union of cause and effect there sprang bitter condemnation of the Board and the System and also many plans for stabilization which proposed to use the power of Federal Reserve machinery for a beneficent purpose. It is, therefore, both pertinent and necessary to examine the charge that inflation and deflation were the result of deliberate policy and also to determine if possible the extent to which the powers of the Federal Reserve Banks, allegedly adequate to bring on disaster, are capable of stabilizing prices.

The table on page 66 will show the course of rising prices and their subsequent fall in the principal nations of the world. It shows that the rise and fall were not confined to any particular country or section of the earth but were world-wide. This fact in itself should have admonished caution in those who saddled the guilt upon the Federal Reserve System.

The Joint Commission of Agricultural Inquiry from whose report the table on the next page was taken ¹ nevertheless asserts

¹ Report of Joint Commission of Agricultural Inquiry, Part I, p. 58.

"The commission believes that a policy of sharp advances in discount rates should have been inaugurated in the first six months of 1919, and cannot excuse the action of the Federal Reserve Banks in this period in failing to take measures to restrict expansion, inflation, speculation, and extravagance which characterized the period."²

With respect to deflation the same report states,

"It seems probable that a change in the policy of the Federal Reserve System with reference to discount rates would have accomplished a reversal in part of the psychological and economic factors which at this time were moving in the direction of lower prices, and at the same time would have tended to induce on the part of banks a more liberal attitude of furnishing additional credit."³

While this report, therefore, does not go so far as to place the entire responsibility of the boom and the crash on the Board, it nevertheless suggests that part of the blame belongs there. There were many others who were not so conservative or judicial.

Professor Fisher in his testimony on the Goldsborough Bill (which is the compensated dollar plan) puts the matter quite bluntly when he says:

"For lack of an effective stabilization policy the Federal Reserve Board has contributed toward the inflation following the armistice and culminating in May, 1920, and the deflation beginning at that date and continuing for a year and a half."⁴

As he presents the matter prices rose to an uncomfortably high point in this country creating general discontent so that the public demanded deflation and the Senate demanded deflation. The Federal Reserve Board "got scared" and deflation came. Fisher ignores completely the fact that the collapse which occurred at this time was world-wide. In fact he ignores the theory of mathematical probability with which he introduces his testimony. If a series of social phenomena of a complicated nature occur simultaneously throughout the world, it is hardly probable that they have been caused by the decision of a single governmental bureau

² *Ibid.*, Part II, p. 15.

³ *Ibid.*, p. 86.

⁴ *Hearings on H. R. 11788*, p. 51.

BREAK IN PRICES IN DIFFERENT COUNTRIES

Date	(A) Japan	(B) United King- dom	(C) France	(D) Italy	(E) United States	(F) Germany	(G) India	(H) Canada	(I) Sweden	(J) Nether- lands	(K) Aus- tralia
1913...	100	100	100	100	100	....	...	100	100	100	...
1914...	96	99	101	95	100	100	100	101	116	106	100
1915...	97	123	137	133	101	....	...	110	145	149	141
1916...	117	160	187	202	124	....	...	135	185	233	132
1917...	147	204	262	299	176	....	...	177	244	298	155
1918...	192	225	339	409	196	....	...	206	339	398	170
1919...	236	235	357	364	212	....	...	217	330	306	180
1920...	259	283	510	624	243	1,522	204	246	347	...	218
1919											
J.	214	217	348	325	203	....	...	211	369	...	171
F.	213	216	340	321	197	....	...	206	358	...	167
M.	206	212	337	325	201	....	...	205	354	...	168
A.	207	214	332	332	203	....	...	206	339	...	171
M.	215	222	325	338	207	....	...	210	330	...	172
J.	228	230	330	358	207	....	...	210	324	...	173
J.	247	240	349	362	218	....	...	217	320	...	176
A.	251	242	347	369	226	....	...	222	321	...	182
S.	257	245	360	372	220	....	...	223	319	...	185
O.	271	252	382	390	223	....	...	221	307	...	200
N.	280	259	405	439	230	....	...	227	317	...	199
D.	288	273	423	457	238	....	...	238	317	...	197
1920											
J.	301	288	487	508	248	....	218	250	319	293	203
F.	313	303	522	557	249	....	209	254	342	289	206
M.	<u>321</u>	<u>310</u>	554	602	253	1,615	198	258	354	290	209
A.	300	306	<u>588</u>	<u>664</u>	265	1,604	200	261	354	296	217
M.	272	304	<u>550</u>	<u>660</u>	<u>272</u>	<u>1,714</u>	<u>210</u>	<u>263</u>	361	297	225
J.	248	291	493	632	<u>269</u>	<u>1,473</u>	<u>206</u>	<u>258</u>	<u>366</u>	297	233
J.	239	293	496	604	262	1,473	209	256	<u>363</u>	<u>301</u>	234
A.	235	288	501	625	250	1,582	209	244	365	289	<u>236</u>
S.	230	284	526	655	242	1,604	208	241	362	288	230
O.	226	266	502	659	225	1,670	206	234	346	283	215
N.	221	245	460	670	207	1,681	194	225	331	261	208
D.	206	220	435	655	189	1,626	180	214	299	233	197
1921											
J.	201	209	407	642	178	1,583	178	208	267	213	196
F.	195	192	377	613	167	1,473	174	199	250	201	192
M.	191	189	360	604	162	1,419	...	194	237	...	181
A.	190	183	347	584	154	1,410	183	187	229	...	171
M.	191	182	329	547	151	1,428	184	183	218	...	166
J.	192	...	325	509	148	1,376	178	179	218	...	162
J.	196	...	332	...	148	1,467	183	176	211	...	...

- A. Japan, Bank of Japan for Tokyo, 56 commodities, average for the month.
 B. United Kingdom, London Economist, 44 commodities, monthly index based upon average of previous weekly indices. For the construction of this index, see Bulletin of the United States Bureau of Labor Statistics, No. 284, October, 1921, pp. 267-274.
 C. France, Bulletin de la Statistique generale, 45 commodities, end of month.
 D. Italy, Prof. Bachi, 38 commodities until 1920, 76 commodities thereafter, end of month.
 E. United States, Bureau of Labor Statistics, 215 quotations, average for the month.
 F. Germany, Frankfurter Zeitung, 77 commodities, beginning of the month.
 G. India, Calcutta department of statistics, 75 commodities, end of month.
 H. Canada, department of labor, 277 commodities, middle of month.
 I. Sweden, Svensk Hondestidning, 47 commodities, middle of month.
 J. Netherlands, Central Bureau voor de Statistiek, 49 commodities.
 K. Commonwealth of Australia, Bureau of census and labor statistics, 92 commodities.

in but one of the many nations affected. The causes must have been, in far greater probability, co-extensive with the incidence of these changes.

Wilford King declares that the inflation during the war could have been avoided by the Federal Reserve Board and that the case against it is still stronger for the post-war inflation which was permitted as a concession to popular clamor.⁵

Such a characterization of Federal Reserve policy is scarcely fair to the system or the men who were charged with its conduct. It is a well-known fact that the government could not have raised all the funds necessary for the conduct of the war through taxation and that borrowing plus inflation to grease the process would be necessary. The Federal Reserve Board considered this an opportunity to perform a valuable service for the government in an emergency and its cooperation took the form of a low and privileged discount rate to assist the flotation of government bonds. This tacit obligation of maintaining a rate below the normal market was not discharged until November of 1919 at which time the Federal Reserve Board for the first time felt itself free to pursue sound discount policy to protect its threatened reserves.⁶

Dr. Frank A. Wolff testifies to similar purpose. Inflation had produced such a dangerous state of unrest that deflation was necessary. Since depreciation was most painfully evident in the high cost of living that was the first point of attack and as a consequence "the first victim of deflation was the farmer, whose bank credit was curtailed to force him to sell at a sacrifice, while the merchants and manufacturers were permitted to carry on as before."⁷

Better ammunition for the demagogue could not be provided. The surprising part is the failure of anyone at the hearings to challenge a statement of this character.

It might be reasonable to suppose that if the Federal

⁵ *Ibid.*, p. 63.

⁶ H. P. Willis, *The Federal Reserve System*, pp. 1395-99.

⁷ Hearings on H. R. 11788, p. 82.

Reserve Board had wedded the intention of deliberate control its administration of the discount rate, constituting its chief weapon, would reveal some distinct causal relation, to the course of business, to the price level and to the effective purchasing power represented by the demand deposits of reporting banks. It is also reasonable, and one might add, elementary, to assume that a cause must precede an effect. An examination of Chart #1 on the opposite page will prove illuminating. We have here a curve representing the total demand deposits of reporting member banks, an index of business activity, the reserve ratio of the Federal Reserve Banks and the average discount rate, monthly, of these same banks. The average discount rate commences its rise in November of 1919, the end of which month has witnessed a drop in the reserve ratio from 51% in September to 45.6%. Not until the end of January does the average rate rise above 5%. From then on until the high point of 6.48% is reached in December of the same year, there is a steady and on the whole rather rapid rise. Now, according to orthodox managed currency theory, a rise in the discount rate acts as a brake and the pressure is applied and increased until the vehicle, consisting of the price level, business activity and credit has slowed down or stopped. Keeping this in mind, we may continue with our examination of the evidence. The reserve ratio throughout 1920 hugs the lower forties until at the very end a definite upward trend becomes apparent. It may be a purely accidental coincidence but as soon as this trend is established the rate of discount drops and by the end of 1921 is again below 5%. Our combined and adjusted index of the volume of manufactures and employment presents a fair index of business activity. It is moreover adjusted for seasonal and cyclical trends. This index reaches its high point of 112.6 in January of 1920. A decline then starts which becomes increasingly precipitate as the year proceeds. At the end of the year, we are near the bottom at 82.7. As for the deposits of member banks we find very little change throughout 1920, although here also the high point is reached in January. Yet the dis-

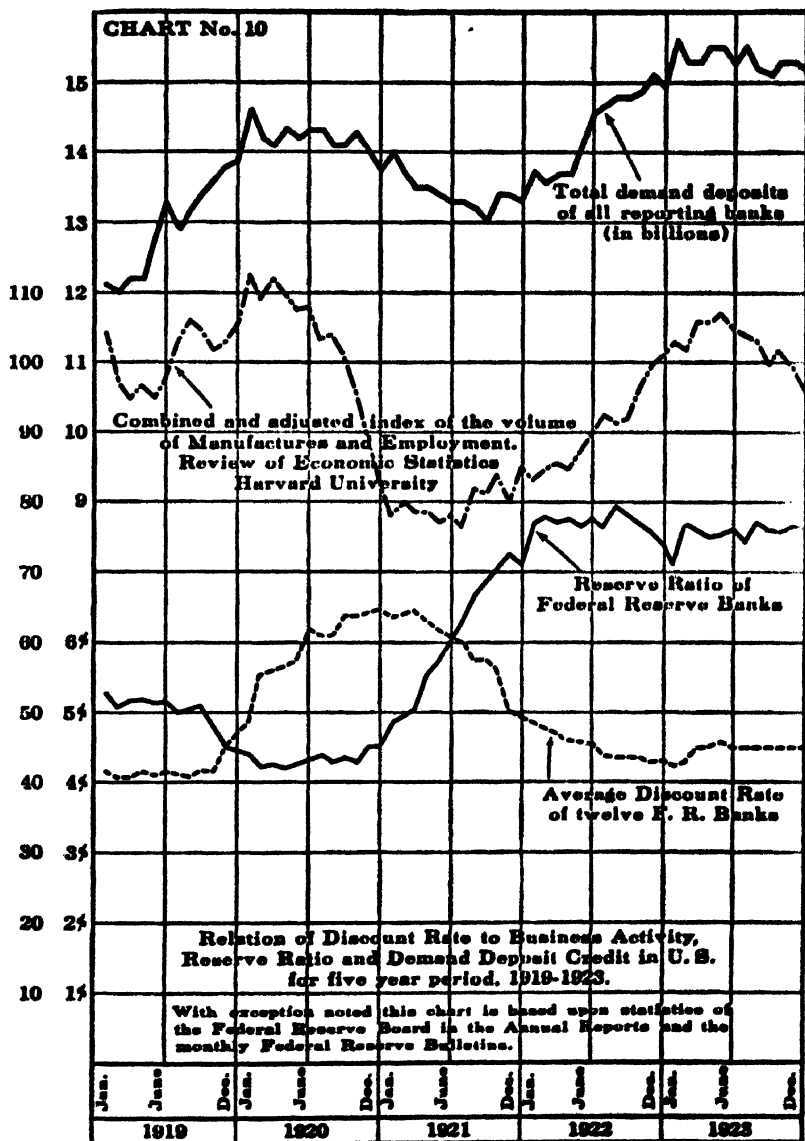


CHART 1

count rate is constantly rising and according to orthodox rules these demand deposits should be dropping. The substantial fall here occurs late in 1921 when, according to equally good theory, they should be rising for the discount rate took a definite downward turn in the early part of the same year. In other words, we have the phenomenon of declining deposits. The evidence shows that the only relation which indicates causal qualities is that between the discount rate and the reserve ratio. As for prices, the high point is reached in the United States in May, 1920, at 268.73,⁸ in Italy during the same month at 700,⁹ in Great Britain in April at 313,¹⁰ in France in April at 588,¹¹ the decline in the United States being accompanied or slightly preceded by similar declines throughout the world. The logic of this testimony would be that the Federal Reserve Board has not only managed things in this country but throughout the world and perhaps a trifle more effectively, if promptness of results is a criterion, abroad than at home. It is a known fact that the boom of 1919 and early 1920 was worldwide and that the depression was similarly broad in its incidence. The world had gone on a post war jag. It reached the "passing out" stage in April and May of 1920 and the latter part of that year and most of 1921 constituted the dull, nauseous hours of the morning after.

As for the discount rate of the Federal Reserve Board of the United States being impregnated with the potency which would bring about a world-wide depression and consequent deflation, in the United States if not elsewhere, we might suggest a comparison with the mule's tail on the postal card. This tail, according to the directions, should be exposed to the elements. If it waves violently, it is an indication to those who have no other sources of information concerning the state of the weather, that the wind is blowing. Likewise if the tail is wet it is reliable evidence that it has rained or is raining. It might be asserted that it is the tail

⁸ Index number of wholesale prices, Federal Reserve Board.

⁹ Index number of wholesale prices, Riccardo Bachi.

¹⁰ Index number of wholesale prices, The Statist.

¹¹ Index number of wholesale prices, Statistique Generale.

which causes the wind to blow and the rain to fall. The attribution of cause to the discount rate in this particular matter has a measure of the same validity.

The conclusion of the writer is by no means unique.¹² Carl Snyder, the able statistician of the Federal Reserve Bank of New York, points out that the influence of the interest rate on business activity and prices has been exaggerated. The vast amount of funds loaned are loaned at fairly definite and consistent rates of interest which vary only within narrow limits and "in response to influences which have little to do, relatively, with the trade cycle or what we call 'business.' " ¹³ The marginal type of loans which do vary widely in volume and rate are mostly loans on stocks and bonds and are rather of a speculative character. Demands from this quarter are met only when the regular customers have been satisfied.

In comparing interest rates on 60 and 90 day commercial paper in the New York money markets for a period of 50 years with the fluctuations of business activity according to the index of bank clearings he finds a variation of 3% to 6% barring extremes of panic and depression.¹⁴ The fifty year average for this type of paper is 4.93%. These variations "while considerable in percentages, do not represent any heavy penalty laid upon business." He argues that such a difference can scarcely be a controlling factor in business. High money rates seem rather the sequelæ or aftermath of business expansion and speculative activity, not, as a rule, in evidence until some time after the decline alike in business and speculation has begun.¹⁵

"The direct effect of interest rates upon the course of the business cycle seems less than many have supposed; and the importance of these fluctuations rather derived from their association with

¹² Youngman, Anna, *The Efficacy of Changes in the Discount Rates of the Federal Reserve Banks*, *The American Economic Review*, September, 1921.

¹³ Snyder, Carl *Influence of Interest Rate on the Business Cycle*, *The American Economic Review*, Dec., 1925.

¹⁴ *Ibid.*, pp. 697, 698.

¹⁵ See Chart No. 1.

or use as business barometers, and especially as storm signals. In the main the more important changes in business seem to take place before the movement of interest rates could be of any material effect. All of which has an important bearing upon the problem of stabilizing trade or moderating the extremes of the business cycle by means of changes in the bank rate."¹⁶

And this man is the chief statistician of the most important of a group of banks charged with the intent of manipulating the interest rate for the purpose of stabilizing business and controlling the cycle.

A further word is here necessary in regard to the supply of gold in the possession of the Federal Reserve Banks. It is claimed that the Federal Reserve Banks have been compelled to accept and retain much more gold than is required under the law and that the excess of this gold is *prima facie* evidence that the Board is hoarding the gold in order to force its price up. Furthermore that the Board is not playing the game according to the rules. These rules state that when a country has more gold than it requires, prices go up, imports are stimulated, exports decline, gold is shipped abroad in settlement of trade balances thereby reducing the amount of gold in the country, increasing the supply of goods, diminishing prices until finally an equilibrium of prices, goods and gold is established and everybody is happy. These critics forget or ignore the distinctions between a central bank entrusted with the responsibility of regulating the flow of credit and currency from its reservoirs in accordance with the solid indications of the business needs of the country and a private bank whose first purpose is to make a profit and whose incidental purpose is or ought to be the service of the community. To a private bank an excess of the reserve is so much idle merchandise which is serving no end but to impair profits. According to their lights their success as a private business institution is measured to a large extent by the size and regularity of the dividends. A central bank is in a class by itself. In a

¹⁶ An analysis of this will be found in the chapters devoted to the discount rate.

number of them the profit motive has been entirely eliminated except in so far as it is necessary to earn a nominal dividend on invested capital and meet expenses. The paramount duty of a central bank is to serve the community. Profits are incidental and absolutely and properly subordinate to this vital purpose. It would be an unpardonable contravention of statutory duty for the Federal Reserve Banks to take their excess gold to the market place and reduce the price until buyers had been found for all of it. It must accommodate the legitimate needs of business, but there is positively no injunction in either the letter or the spirit of the law compelling it to maintain its reserves at the legal minimum. We know that with private banks, particularly in this country, the legal minimum is usually the actual reserve. That is sound business—for them. To apply the same rule to a central bank is to place the welfare of the nation in precisely the same jeopardy to rescue from which was the principal motive for its establishment. We know also, that before the war the Bank of France frequently piled up enormous reserves and there echos down to us no hue and cry about forestalling, engrossing and regrating, the malign triplets of sinister monopoly. It is a wise central bank which maintains an adequate margin over and above the legal minimum. The law never contemplated the latter as the actual reserve and in order to discourage any tendency to play too closely to the line imposes a graduated tax upon the encroachment of this reserve. An ample reserve is a stabilizing influence. It inspires confidence. The community knows that in case of need there are willing sinews ready to hand. To seriously hold that the Federal Reserve Board is afflicted with a sentimental attachment to gold, or cherishes selfish malice toward Europe or both is to display an egregious ignorance of the facts.

What measures has the Federal Reserve Board taken to prevent the flow of gold out of this country or to prevent its wider use in this country? If a low discount rate be an indication of the hoarding instinct of a central bank then

the charge is true. If a high gold price level constitutes proof that the country is reluctant to permit its gold to depart, again, we submit, that the charge is true. But the argument is a violation of reason and the facts are substantially as given. The discount rate of the Federal Reserve Banks is among the lowest in the world to-day.¹⁷ Our gold price level is among the highest. One might well maintain that we are making a deliberate effort to get rid of our gold and have been doing so for some time—if indisposed to grant that we might be actuated by a desire to help those who need it more than we do.

To anyone at all familiar with the temper of American politics it is not necessary to add that the power to regulate prices and business through the discount rate, through the qualitative or quantitative restriction of credit, through the issue or retirement of notes, or by all these means combined, would constitute for the Federal Reserve System its cup of hemlock juice. It is impossible for the price level to move in one direction or another without disturbing equities and favoring one class at the expense of the other. Those who gain are very apt to attribute their good fortune to their own skill, shrewdness and foresight. It is equally certain that those who lose will attribute the sum total of their misfortunes to the Federal Reserve Board. With that power would come the sombre responsibility of defense against the sulphuric assaults of those whom fortune has failed to favor.

Fortunately, the power with which the Board has been so gratuitously clothed has no existence in fact. Charts #2 and #3 bear the evidence. The total means of payment of the country and the discount rates are the two chief instruments of control at the disposal of the Federal Reserve Board. It is alleged that through the exercise of these two controls business can be regulated and prices stabilized. In Chart #2 we have the circulation of money in the United States during the five year period 1921-1925, the total demand deposits of all reporting banks for the same

¹⁷ April, 1926.

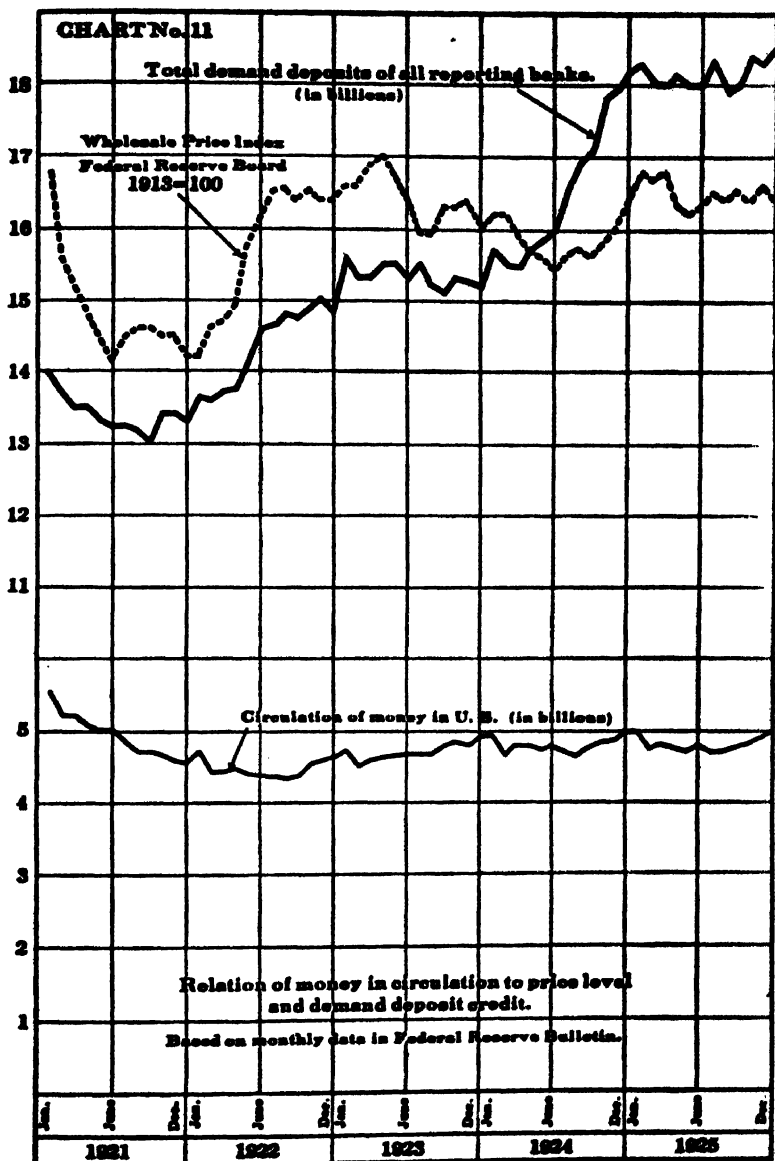


CHART 2

period and the wholesale price index of the Federal Reserve Board. It has been maintained that there is a functional relation of some kind between the quantity of money in circulation and deposit credit in banks. If this could be established the two controls of the Federal Reserve Board could be brought to bear on our most important means of payment, i.e., credit instruments. It would make the control of the total effective purchasing power of the country much more susceptible to the will of the central financial authority. It is doubtful if such a functional relation exists or in fact if any precise relation, valuable for purposes of control, exists.

In the chart on the opposite page we have a graphic presentation of the relation of business activity and the price level on the one hand to the total effective purchasing power of the country and the discount rate on the other. The combined index of industrial activity is the average of the Federal Reserve Board index of manufacturing, agriculture, mining and employment. This average is unadjusted for seasonal or cyclical fluctuations and presents a fair picture of the normal variation of industrial activity, particularly for the years 1923, 1924 and 1925. Taking these latter three years this is seen to be rather radical. It should be sufficient to give pause to those who propose to regulate prices through the stabilization of business.¹⁸ The price level for these three years has shown a stability which is a distinct relief from the extreme swings of the preceding eight years. Purchasing power has mounted, the discount rate has fallen to rise again slightly, the price level is fairly stable and business activity displays an inscrutable fickleness. Is there evidence here of manipulation, of deliberate cause and effect? For the average person such a conclusion would be rash.

Perhaps we can do no better than conclude with the words of that body about whose innocent head much of the storm has raged, taken from the very text wherein, Keynes

¹⁸ J. R. Bellerby, *Monetary Stability*.

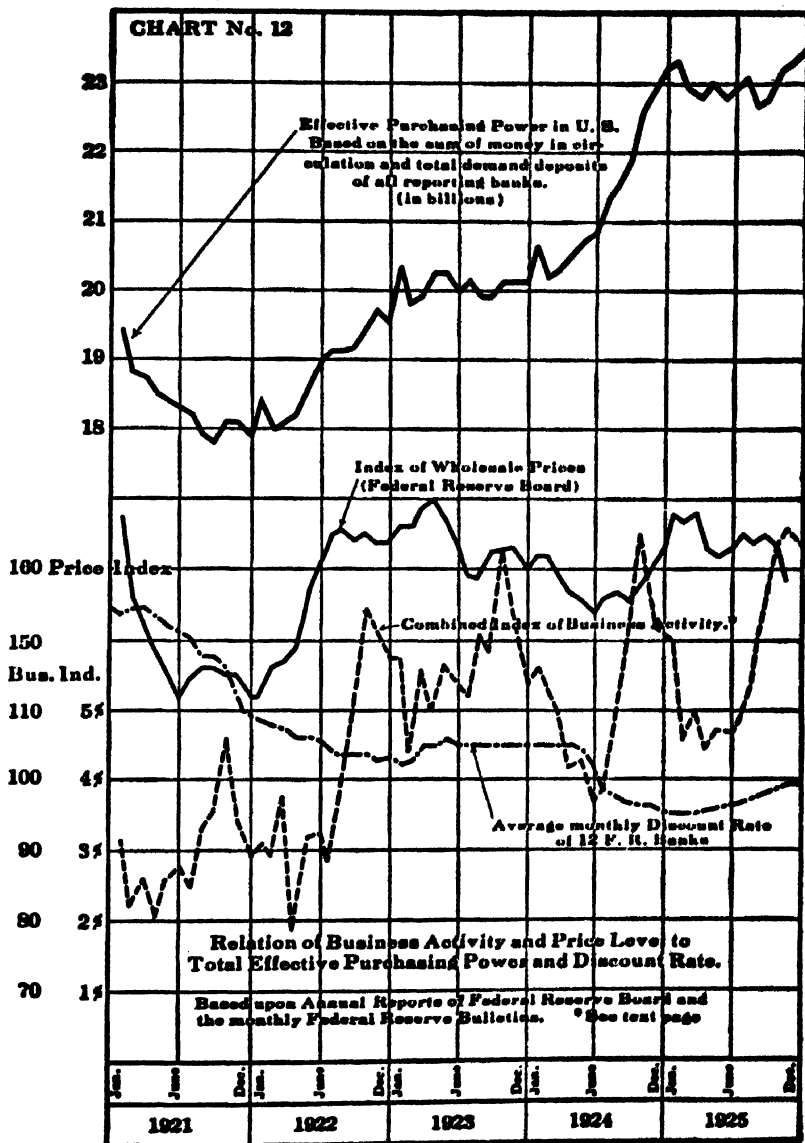


CHART 3

maintains the heinous admission is made, that henceforth our currency will be "managed."

"No statistical mechanism alone, however carefully contrived, can furnish an adequate guide to credit administration. Credit is an intensely human institution and as such reflects the moods and impulses of the community—its hopes, its fears, its expectations. The business and credit situation at any particular time is weighted and charged with these invisible factors. They are elusive and cannot be fitted into any mechanical formula, but the fact that they are refractory to the methods of the statistical laboratory makes them neither non-existent nor non-important."¹⁹

¹⁹ Annual Report of the Federal Reserve Board, 1923, p. 32.

CHAPTER IX

The Goldsborough Bill—Fisher's Explanation—Co-operation of Federal Reserve Board Required—Objections by Representative Wingo.

IN spite of the reasoned defense offered on behalf of the Federal Reserve Banks, there was a general feeling that they were in large part to blame for the extreme fluctuations in the price level and the hardships which ensued. It also focused the attention of the nation on the evils of an unstable standard and strengthened the hands of those who believed they could provide a solution.

During the Second Session of the 67th Congress Fisher's Plan was introduced by T. Alan Goldsborough, Representative from Maryland as H.R.11788. Hearings were held before the Committee on Banking and Currency of the House of Representatives during the latter part of December, 1922, and on January 29, 1923. The bill as introduced follows:

(H. R. 11788, Sixty-seventh Congress, second session.)

A BILL to stabilize the purchasing power of money.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

REPLACEMENT OF UNSTABLE BY STABLE DOLLAR

That at three o'clock eastern time in the morning of January 8, 1924, the gold dollar of the United States shall cease to be a constant quantity of gold of variable purchasing power, and thereafter shall be a variable quantity of standard gold bullion of approximately constant computed purchasing power.

Said quantity of standard gold bullion, constituting a gold dollar at any given time, shall be ascertained and fixed from time to time by the computation and use of index numbers of wholesale prices as hereinafter set forth: *Provided*, That the gold dollar shall remain twenty-five and eight-tenths grains of standard gold until some other quantity is fixed under this act.

COMPUTATION OF INDEX NUMBER AND ITS DEVIATION FROM PAR

Sec. 2. That for the purpose of computing approximately the fluctuations of various wholesale prices in the United States after three antemeridian, eastern time, January 8, 1924, and of computing index numbers such as will approximately measure the average of such fluctuations, and of computing therefrom the approximate fluctuations in the purchasing power of gold, the Bureau of Labor Statistics, hereinafter referred to as the Computing Bureau, shall proceed as follows:

(a) From the list of commodities and the quantities thereof marketed at wholesale in the United States the Computing Bureau shall from its data, immediately after the passage of this act, make up a list of selected commodities comprising about one hundred commodities (not less than seventy-five nor more than one hundred and twenty-five) deemed by it to be the most suitable (as to importance and otherwise) to be used for computing the said index number.

(b) Immediately after January 1, 1924, the Computing Bureau shall compute, from the best accessible data, the average price of each of these commodities for the year 1923.

(c) From the several average prices computed and quantities listed for 1923 by the Bureau of Labor Statistics the Computing Bureau shall compute an ideal composite "goods dollar" for reference purposes consisting of such quantities of the several selected commodities, proportional to the quantities so listed by the Bureau of Labor Statistics, that their aggregate value, at the average prices, so computed for 1923, shall equal 100 cents.

(d) From average wholesale prices computed from price quotations taken on the first Wednesday (or, if that day be a holiday, the next business day) of the months of January, March, May, July, September, and November of 1924 and each year thereafter, the Computing Bureau shall speedily compute the value in cents, of the composite "goods dollar," and such value in cents shall be the index number of prices for that date.

(e) The Computing Bureau shall compute the deviation from par of such index number by subtracting 100 cents from said index number. Thus, if the index number is \$1.01, the deviation is 1 cent or 1 per centum above par, and if the index number is \$0.98, the deviation is 2 cents or 2 per centum below par.

TRANSMISSION THEREOF TO BUREAU OF THE MINT

Sec. 3. That the index number, deviation percentage, and all the data from which they are computed shall (unless delayed by unavoidable causes) be transmitted by the Computing Bureau to

the Bureau of the Mint within one week from the day to which the data relate.

CALCULATION OF THE CORRECTION OF THE DOLLAR'S WEIGHT

Sec. 4. That the Bureau of the Mint, upon receipt from the Computing Bureau of such percentage deviation, shall forthwith calculate a percentage correction or adjustment to be added to, or subtracted from, the then weight of the dollar. Such adjustment (provided it shall never exceed the "brassage" charge of 1 per centum described below) shall be equal to the percentage deviation.

PROCLAMATION THEREOF

Sec. 5. That the Bureau of the Mint shall then forthwith give public notice that, on and after the day next following such notice, and until changed by further like notice under this act, the number of grains of standard gold so computed shall constitute the gold dollar of the United States; and thereupon the number of grains of standard gold in the gold dollar of the United States shall be fixed as prescribed in such notice.

UNRESTRICTED ISSUE OF CERTIFICATES FOR GOLD (FREE COINAGE)

Sec. 6. That after January 7, 1924, the Bureau of the Mint shall receive, subject to a "brassage charge" of 1 per centum and subject to such conditions and limitations as are now provided by law touching the receipt of gold bullion to be coined, all gold bullion offered to it, and shall pay for the same with "gold bullion dollar certificates" described hereinafter at the rate of \$1 for the number of grains of standard gold in the dollar as then last fixed by or under this act and (as to any balance less than \$100) in lawful money.

UNRESTRICTED REDEMPTION OF CERTIFICATES IN GOLD

Sec. 7. That after January 7, 1924, the Mint Bureau shall receive all gold bullion dollar certificates tendered to it and shall forthwith pay for the same, dollar for dollar, in standard gold bars at the rate of \$1 for the number of grains of standard gold in the gold dollar of the United States (as fixed by or under this act for the time of such receipt) and (as to any balance less than five ounces of standard gold) in lawful money.

DETAILS—CONVERSION OF COIN INTO BULLION

Sec. 8. That after the passage of this act no gold coin shall be struck by the United States. The Secretary of the Treasury

shall provide, by rules and regulations to be issued within three months after the passage of this act, for the conversion before January 7, 1924, of gold coin of the United States owned or acquired by the United States into bars of standard gold, each containing not less than five ounces, and for like prompt conversion of all like gold coin thereafter acquired by the United States.

TO FACILITATE THE WITHDRAWAL OF GOLD COIN FROM CIRCULATION INTO THE TREASURY THROUGH THE FEDERAL RESERVE AND NATIONAL BANKS

Provided, That the United States, under such rules and regulations as the said Secretary may prescribe, shall receive all standard gold coin of the United States offered to it and pay for the same in lawful money at the rate of \$10.01 of lawful money for every \$10 of standard gold coin so offered from the date of this act to January 7, 1924, inclusive, and at the rate of \$1 for every dollar of standard gold coin offered to it thereafter. Such payment shall be made in the gold bullion dollar certificates herein authorized and (as to any balance less than \$100) in lawful money.

CONVERSION OF OLD CERTIFICATES INTO NEW

Sec. 9. That within three months after the passage of this act the preparation, issue, and paying out by the United States of present gold coin certificates shall cease. For all gold coin certificates then owned or thereafter acquired by the United States there shall be substituted, dollar for dollar, gold bullion dollar certificates certifying "that the United States of America will pay the bearer on demand \$100 in standard gold bars of not less than five ounces each and any smaller balance in any lawful money." Upon such substitution such gold coin certificates shall be destroyed.

TO ACCELERATE SAID CORRECTION AT THE START, ESPECIALLY THROUGH THE FEDERAL RESERVE AND NATIONAL BANKS

Provided, That the United States, under rules and regulations to be prescribed by the Secretary of the Treasury, shall receive all gold coin certificates offered to it and pay for the same in lawful money at the rate of \$10.01 of lawful money for every \$10 of gold certificates so offered from the date when their issue ceases to January 7, 1924, inclusive, and at the rate of \$1 of lawful money for every dollar of such certificates so offered after January 7, 1924.

GOVERNMENT GOLD RESERVE AND SURPLUS

Sec. 10. That the Secretary of the Treasury shall divide all the gold against which gold coin certificates and gold bullion dollar certificates are outstanding at three o'clock antemeridian January 8, 1924, into two parts, one part to be known as the reserve against outstanding gold bullion dollar certificates and equal to 50 per centum of the value of the gold certificates then outstanding and the remaining part to be known as the surplus in excess of said reserve.

This remainder or "surplus" shall be forthwith transferred to the general fund of the Treasury as the initial profits of the new system.

The "reserve" shall be maintained daily as nearly as possible at 50 per centum of the gold bullion dollar certificates outstanding from time to time.

If on any date the reserve falls short of 50 per centum it is to be restored by withdrawing from circulation and canceling gold bullion dollar certificates.

If on any date the reserve exceeds said 50 per centum it is to be restored by issuing and putting into circulation the requisite number of new gold bullion dollar certificates.

The Secretary of the Treasury is authorized to make said withdrawals of certificates from circulation by withdrawing from the Government deposits in national banks and to issue certificates and place them in circulation by adding to those deposits.

CERTIFICATES AVAILABLE FOR BANK RESERVES

Sec. 11. That all provisions of existing banking laws of the United States regulating the holding of gold reserves, including reserves of any Federal reserve bank, national bank, or other bank, shall be deemed to be satisfied by such holding of gold bullion dollar certificates.

LEGAL TENDER

Sec. 12 (a) That gold coin of the United States shall not be a legal tender in payment of debts falling due after January 7, 1924.

(b) That all debts, public and private, falling due after January 7, 1924, including debts theretofore created and expressed in dollars of "gold coin of the present standard of weight and fineness," or expressed in words of like import, shall be payable in standard gold bars at the rate in grains per dollar fixed by or under this act for the time when each debt falls due, and the balance, if any, less than five ounces, in lawful money. Such

standard bars shall be lawful money and a legal tender for this purpose. .

PUBLICITY

Sec. 13. That the computing bureau shall, as promptly as possible, make public in suitable public documents all the pertinent facts and figures concerning the calculation of the index number and its percentage deviation from par, including the market quotations for the constituent commodities. The mint bureau shall likewise make public its findings as to the adjustment of the dollar's weight.

FINANCING THE ADMINISTRATION OF THIS ACT

Sec. 14. That a sum equal to the initial profit as defined in section 10, or so much thereof as may be necessary, is hereby appropriated and is made available until expended as the Secretary of the Treasury shall direct for all expenses necessary for the administration of this act; and the Secretary of the Treasury is authorized to use the receipts from time to time from the "brassage charge," as defined in section 6, for the same purpose.

FUTURE REVISIONS OF INDEX NUMBERS

Sec. 15. That immediately after the data of the census of 1920, and other subsequent censuses, respectively, are available, the computing bureau, from such data and the best other available data, shall revise the list of selected commodities and designate a revised composite "goods dollar" by the same method as hereinbefore described and such that, at the moment of revision, the value of the new or revised "goods dollar" shall be equal to that of the old.

PENAL CODE AMENDMENT

Sec. 16. That section 147 of the Penal Code approved March 4, 1909, defining "obligation or other security of the United States," is hereby amended to include the gold bullion dollar certificates hereby authorized.

REPEAL OF FORMER ACTS

Sec. 17. That all acts and parts of acts inconsistent with this act are hereby repealed.

Perhaps it is only fair to employ Fisher's own words in explaining the *modus operandi* of the bill.

"The idea of the bill is simply this: Let us start out with a certain price level as a standard. The selection of the level is an in-

dependent problem; that is not a part of what I'm going to speak about. I shall merely say that the level ought to be somewhere near what it is now.

"Suppose, then, we take the present level for illustration, and agree that this level shall hereafter be the standard. We are going to prevent in the future a great rise in prices; we are going to prevent in the future any great fall of prices. In other words, this bill aims to prevent inflation or deflation; that is all there is to it.

"We take the present price level and call it 100 per cent. In two months the computing bureau, one of these two bureaus in the Government, assesses the situation; it calculates the price level. Suppose it finds the price level is then not 100 per cent but 101 per cent. What does that mean? It means that there is a deviation above par of 1 per cent. The computing bureau then sends a note to the Bureau of the Mint, reporting this figure of 1 per cent, showing inflation is beginning. In other words, there is a deviation of plus 1 per cent of our standard price level; the price level is a little too high or the dollar a little too low. The dollar is a short dollar; it only buys 99 per cent of what it should. We can call it even a short weight dollar. This is remedied by the mint as soon as reported. It puts 1 per cent more gold into the dollar and brings it up to par; . . .

"But, of course, in the next two months something else may happen, and instead of the price level immediately coming down to par and staying there, we may find that for any number of thousands of reasons at the end of another period of two months—we call that the 'adjustment period' in the bill—the price level is still 101; it has not gone down. What we have done in raising the weight of the dollar has tended to pull it down, but it has not fully succeeded. It is still 1 per cent above par. The same remedy is applied as soon as the mint receives from the computing bureau the report that the deviation is still 1 per cent. We simply repeat the dose. The Bureau of the Mint immediately again adds 1 per cent to the weight of the dollar.

"Then at the end of another two months, if the price level still persists obstinately in staying above par, we load it again, and likewise we load it again and again, as far as necessary to bring the price level back to par, until the dollar, instead of weighing one-twentieth of an ounce, weighs half an ounce or a ton, whatever is necessary to bring its purchasing power back to par. Of course, it would not practically differ very much from the 23.22 grains; it might go up to 25 or 30.

"Then, if it works the other way—if at any time the Computing Bureau finds that the index number stands at 99, that means

that deflation has begun; and to offset that and prevent any continuation of it, to rectify it, we immediately unload the dollar by 1 per cent, which tends in the opposite direction, and, if that does not suffice, in another two months we will discover what is still necessary and load it again, and so on, until it gets back to par.

"So it is just like steering a bicycle or an automobile. If it deviates a little you turn the wheel slightly and if that is not enough you turn it some more, or if you turn too much you turn it back, and keep the automobile in pretty nearly a straight line. Nobody can steer a machine with absolute straightness; but it is amazing how straight you can steer it if you only touch the wheel a little here and there; and that is exactly what we mean by these two bureaus, by trial and error every two months."¹

Fisher admits that this manipulation of the gold content of the dollar will not by itself stabilize the purchasing power of currency. Since many of our purchases are paid for with bank credit, some control of the latter will be necessary. For this, reliance should be placed upon the Federal Reserve Board. That body should attempt to maintain the bank deposits of the country in some stable relation to the currency base, and if the base is kept stable then obviously the structure resting upon it will also be stable. If the Federal Reserve Board does not possess such power at present the act should be amended to grant it adequate authority to cooperate in making the purpose of this plan effective.

The bill provides that such changes in the gold content of the dollar as the government makes shall be made in magnitudes not exceeding one per cent at a time. At the same time the government shall insist on a difference of one per cent between the buying and selling price of bullion. This would forestall effectively any attempt on the part of a speculator to take advantage of a prospective increase in the price of bullion. If it is apparent from a previous decline in prices that the price of gold is going to be increased or, to use other words, that the amount of gold which will constitute a dollar will be decreased, it would be

¹ Hearings on H. R. 11788, pp. 24-25.

possible for a trader to buy a large quantity of gold from the government to-day at, let us say, \$20.67 an ounce and sell it back to the government tomorrow at \$20.88. If the government levies a brassage charge under which it will pay one per cent less for gold than it asks, this danger will be eliminated.

Professor Rogers, a supporter of the bill, advances a criticism which Professor Fisher asserts is the only constructive criticism of this plan which he has seen for ten years,² an admission which is followed by the comment that "Professor Rogers is a very acute man."³

Rogers suggests that a situation might arise where a radical change has taken place in the price level, a change which cannot be counteracted by a single modification of one per cent in the gold value of the dollar. In such an event the government would be in arrears and there would be in prospect a series of changes in the same direction for some time. If the change had been an increase it would require successive increases in the gold value of the dollar to bring the price level back to normal. An Englishman might send gold over as soon as he is persuaded of the certainty of a series of future changes, buy dollars with the gold and invest them in liquid securities. As soon as the necessary adjustment in the gold content of the dollar had been made, which may be 5%, he redeems his dollars in gold and sends the bullion to England and he has made the 5% plus the interest which his funds earned in the market minus the interest which his sterling might have earned in London and the cost of shipping gold twice across the Atlantic. On the other hand, if the price level is dropping, indicating that the dollar has too much gold, the Englishman may acquire dollar credits in New York, convert them into gold, ship the gold to London, invest it there until the dollar has been adjusted to its lower gold content, reship that amount of gold which will equal his indebtedness, less of course than the amount he secured, and repay his debt incurred for this particular transaction. Let us assume

² *Ibid.*, p. 41.

³ *Idem.*

again that the process of adjustment has taken ten months and that five changes of one per cent each have been made so that the new dollar is 95% as heavy as the old. In selling the gold back to Uncle Sam a brassage charge of 1 per cent is made, leaving a net gain of 4%. To this may be added the interest secured in the London market and from this total must be subtracted the interest on the finance bill and the cost of shipping gold twice across the Atlantic.

This danger while real would develop compensating forces. Taking the latter case, where a fall in prices has necessitated a diminution in the gold content of the dollar, the demand for dollar credits would depress exchange, i.e., the amount of sterling offered for dollars would increase, and the price of sterling in dollars would decline. This might seriously impair the prospective attractiveness of the transaction. Furthermore, the demand for dollar credits would tend to raise interest rates in New York and, since the proceeds in the form of gold are flowing to London, the effect there would be just the opposite. It would consequently require not only a certain decrease in the gold content of the dollar but also a substantial one. These two requirements inject a risk into the transaction which would require additional compensation and hence reduce the danger of extensive speculation of this character. The risk is real since there are other factors which may operate just as radically in the other direction and what appeared at one time to impose upon the government the need for continuous decrease in the gold equivalent of the dollar may be eliminated by these extra-auriferous influences.

Fisher suggests that his plan would verily be inexpugnable provided the Federal Reserve Board cooperated. However, even though the Board were hostile to the scheme, it would be powerless to prevent the achievement of its purpose, i.e., stabilization, although that purpose might be made more difficult of attainment. To prevent the possibility of friction, it would be advisable to place upon the Board a statutory duty of cooperation. At this point Mr. Goldsborough proposes a change in the powers of the Board

as defined in Subsection D of section 14 of the Federal Reserve Act from:

"To establish from time to time, subject to review and determination of the Federal Reserve Board, rates of discount to be charged by the Federal Reserve Bank for each class of paper, which shall be fixed with a view of accommodating commerce and business."

to

"To establish from time to time, subject to review and determination of the Federal Reserve Board, rates of discount to be charged by the Federal Reserve Banks for each class of paper, which shall be fixed with a view of accommodating and stabilizing agriculture, commerce, and business, and preventing deflation and inflation." ⁴

Although Fisher considers this an "excellent thing" the suggestion encounters a storm coming from Mr. Wingo who expresses what is undoubtedly a widely prevalent sentiment. No single body, asserts Mr. Wingo, should be endowed by legislative act with the arbitrary power to fix prices.

"The Federal reserve banks were intended to be the servants, not the masters, of the credit merchants of this country—that is, the country bankers . . ." ⁵

Furthermore Mr. Wingo suspects that the Board has actually usurped a power which it was never the intention of Congress to grant and for the dictatorial exercise of which that body is now seeking legislative sanction. Mr. Wingo brings from Fisher the admission that the control of credit would be just as effective in regulating prices as the control of the gold content of the dollar ⁶ and clearly indicates that in his opinion no free people should tolerate the exercise by a government bureau of the power to control credit for the purpose of controlling prices. In fact he feels, a sentiment in which Mr. Steagall joins, that all the

⁴ Hearings on H. R. 11788, p. 47.

⁵ *Idem.*

⁶ *Ibid.*, p. 48.

criticism levelled against the Federal Reserve Board has been due to the actual or suspected exercise of such a power for such a purpose.

To Mr. Wingo price control, no matter how achieved, constitutes an interference with the freedom of human judgment. The latter may be fallible but it is the inalienable right of every citizen in a free land to make as many mistakes as he chooses. That is a strictly personal matter. He sees in the plan "an automatic law to make people use better judgment." ⁷

Another difficulty which Wingo brings out is the fact that the vast majority of people in this country are unable to grasp the concept of a general price level. To them prices signify particular prices, the prices of the goods and services in which they have the most immediate interest. The merchant and the cotton farmer will each think of the prices of the goods which they have to sell and buy and the pabulum of a stable general price level will remain uncomprehended and unappreciated. This fact has an unfortunate significance in a country where such individuals play a prominent part in political drama and their protests are so distinctly audible. To the wheat farmer the low price of wheat will be associated with the price controlling power of the Federal Reserve Board and no matter how academicians may rail at the obtuseness of a class of citizens who are unable or refuse to distinguish between particular prices and general prices, the fact remains that this governing body will be charged with the unhappy economic state of the wheat farmer.

Mr. Wingo also feels that in spite of a deliberate denial of the power to control commerce to the Federal Reserve Board, a question productive of much heat in the hearings of 1913, and a definite restriction of the power to control the discount rate "with a view of accommodating commerce and business" the Board has flagrantly defied the intent of Congress and has in the exercise of this power translated "accommodating" to "controlling." ⁸

⁷ *Ibid.*, p. 49.

⁸ *Ibid.*, p. 48.

Dr. Shibley, one of the speakers, urges that any comprehensive plan for the stabilization of the price level must take into account the influence of credit expansion and contraction. This in fact is a more important element than the currency itself since 90% of all payments are made by check. By granting to the Federal Reserve Board the power to control the interest rate in order to promote stability of prices fluctuations in the price level due to credit changes could be eliminated. The gold content of the dollar need not be changed and the only occasion where that would be necessary would be in the event of an increase or decrease in the supply of gold. Then the gold content could be changed to compensate for the altered value of the gold.⁹

He is obsessed with the notion that the chief purpose of controlling the interest rate by European central banks was to stabilize the price level. Thus, when the Bank of England raised the rate, average prices fell and vice versa.¹⁰

Shibley takes decided issue with his predecessors on the stand. Instead of condemning rising prices, and particularly the period of inflation after the war, he asserts that it saved humanity from being overwhelmed by a flood tide of radicalism. The rise in prices, the result of the deliberate policy and far-seeing wisdom of the Federal Reserve Board stimulated industry and enabled it to absorb the millions of young men who had been disbanded from military service. Even with such a substantial palliative the red spectre was raised in Oregon and made evident in the demand of the railroad men for the Plumb Plan and the coal miners for nationalization of the coal mines. Had it not been for this opportune inflation the fate of this country might have been that of Bavaria, Hungary or Russia.¹¹

Shibley in fact urges that the commission established to maintain the level of prices should be granted the power to raise or lower the price level in an emergency and the emergency which he has most distinctly in mind is that of war. During every war, prices should be raised.

⁹ *Ibid.*, pp. 95-96.

¹⁰ *Ibid.*, p. 101.

¹¹ *Ibid.*, pp. 104-105.

This compels the people to save and permits business men to realize great profits which are used to increase production. One wonders what the people in a democracy ¹² would have to say to such a frank proposal for coercive individual economy. It may seriously be questioned whether such a policy, deliberately attributable to the decision of a small group of men, and having as one of its effects the diminution of the real income of a large class on behalf of another smaller class, would be more or less conducive to radicalism than the changes which come under an unman-aged gold standard.

In considering the level that would be the most propitious to start with, Representative Strong of Kansas made a statement that is highly significant of the attitude of every class of producers and of every group which has an interest in the social income stream. "We do not want to start unless wheat and cotton and everything else is up." ¹³

Representative Steagall maintains that this scheme involves placing in the hands of a few men the power to control the price level and human nature being as it is the exercise of such a power is bound to provoke jealousy no matter how wisely and well the plan is administered.¹⁴

¹² Hearings on H. R. 11788, p. 105.

¹³ *Idem.*

¹⁴ *Ibid.*, p. 106.

CHAPTER X

Criticism of the Goldsborough Bill—Injury to Producer of Gold—Would Destroy Stability of Exchanges—Impair Profits of Exporters and Importers—Unconstitutionality of Plan—Effect on National Pride—Disturbance of Equities of Debtors and Creditors—Fluctuation of Prices Less Objectionable Than Deliberate Control—Interference with Tariff—Failure to Take Human Nature into Account.

IN addition to the difficulties developed during the hearings, we have the position of the gold mine owner to consider under the operation of the Fisher Plan.

As prices go up the purchasing power of gold diminishes. The price of gold at present does not vary. It is always \$20.67 for one ounce of pure gold. The prices of the materials and the labor which the mine owner must purchase increase with the increase in the general price level. He, therefore, finds his enterprise decreasingly profitable as prices go up. As a consequence only the best mines can remain in operation and those on the margin are compelled to suspend operations and wait for a better day which in their case will come when prices drop. We find, therefore, that in a period of rising prices gold production tends to fall off. In this country gold production fell from \$101,035,700 in 1915 to \$49,096,000 in 1922.¹

What will happen under the Goldsborough Bill? When prices go up the effects on the producer of gold will be just the same. It will act as a wet blanket on his productive enthusiasm. However, this rise in prices will signify that the value of gold relative to other commodities is diminishing and the Government under the provisions of this bill has pledged itself to do something about it. In fact, it proposes to do nothing less than sacrifice the gold producer in the interest of a problematical price stabilization. It is going to increase the gold content of the dollar. In other

¹U. S. Mint Reports.

words, it is going to pay less than \$20.67 per ounce for gold. The gold producer will be an innocent victim of a social experiment. He will be crushed between a diminished price for his product and an increased cost of production. His predicament is not the result of unplanned and haphazard overproduction. It is not caused by a capricious change in demand. It is, on the contrary, the effect of a deliberate decision on the part of a governmental bureau. Shall we call this deprivation of property without due process of law? Shall the government compensate the gold mine owner and if so how can a just compensation be determined? Or will it lead to nationalization of the gold mines?

The adoption of the Fisher plan by a single nation would involve difficulties in the field of foreign trade and foreign investments that militate seriously against its adoption. In the opinion of Professor Fisher, this is his plan's greatest weakness.²

It would, in the first place, add an element of instability to foreign exchange. Let us assume that cable rates for the past month have been 4.8665 for sterling. A large importer of hardware and cutlery, who makes a specialty of fine Sheffield table ware, has purchased a bill of goods amounting to 100,000 pounds sterling or \$486,650. His turnover is rapid and he expects a narrow margin of profit. In fact he is satisfied with one per cent. This he will realize if he sells this lot for \$492,516.50. He has accepted a draft which binds him to place in London one month after sight the sum of 100,000 pounds. He expects to purchase this credit with the proceeds of his hardware sales. He has done so in the past and he sees no reason why it cannot be done again. In fact, he has already made most of his contracts for delivery before his imported cutlery arrives. This part of his plans is therefore smoothly consummated. Unfortunately, the barometer of prices has been depressed for the past month and has been hovering around 99. The government bureau charged with the administration of the Fisher Plan has been sufficiently impressed with this evidence of subnormality

² Hearings on Goldsborough Bill, H. R. 11788, p. 152.

in prices to decide upon a reduction in the gold content of the dollar and accordingly on the first of the month it announces a reduction of one per cent. Until further notice 22.9878 grains of pure gold will be known as a dollar. The effect on the exchanges is immediate. The hylic weight of the monetary unit has been decreased and a new ratio will have to be established between it and other gold units. Instead of mint par of \$4.8665 with sterling we have a new norm about which exchange rates may range within the comparatively narrow confines of the gold points. The new mint par is \$4.91666. The time has come for the domestic importer to place in London the 100,000 pounds sterling in payment for the goods which he has in the meantime sold and for which he has made collection in dollars. Each pound sterling now costs him not \$4.8665 but \$4.91666 and his total outlay in dollars necessary to effect settlement is \$491,666.66. Instead of an anticipated profit of \$4,866.50 he discovers one of \$849.84. By the time he has paid his expenses, happily low, he has nothing left for his pains except a frayed temper and a valuable lesson in the blessings of a stabilized dollar. As an individual, he will doubtless nourish an abiding resentment against all social reforms which sacrifice the legitimate interests and honest rewards of minorities for the ethereal benefit of society.

One can readily visualize the headlines in the journals of the day when the occurrence above described takes place. "Exchange Jumps to New Par," "Thousands of Contracts Affected," "U. S. Chamber of Commerce Urges Appointment of Board of Arbitration," "Importers Organize to Repeal Fisher Bill," "Hearings on Injunction to Restrain Price Bureau," "Test Case to be Taken to Supreme Court."

Continuing the above situation let us assume that the reverse takes place, i.e., that the price level has been showing a persistent tendency to rise and has finally brought the announcement that the gold in the dollar would be increased one per cent. The mint par of the English pound will again be disturbed but this time in the opposite direction. Since there is more gold in the new dollar, it will take

a smaller number of dollars to equal the gold contained in the pound. The dollar now contains 23.4522 grains of pure gold, the pound still has but 113 grains. Dividing the latter by the former, we have the new par, 4.818354. The importer now requires only \$481,835.40. Instead of making a profit of \$4,866.50, he realizes one of \$10,681.10. He will most certainly consider this an evidence of his exceptional shrewdness in having previsioned this change in the dollar and so synchronized his own engagements that he has fallen heir to a profit more than twice as great as that which he ordinarily receives. It would take a business man of an exceptionally judicial disposition to attribute this bit of good fortune to the decision of the Price Bureau. One needs only to reflect on the psychology of traders during a period of rising prices to realize how true this is. Verily one must have broken innumerable mirrors and be muscle bound above the ears to fail to make profits in such a period. Yet how many of these entrepreneurs in saying their prayers before retiring invoke higher blessing upon the government whose fiscal exigency has been the greatest ultimate factor in their large profits? Such gratitude we need not seek for it will be found only in rare instances.

The importer having sustained no pains will give the decision of the Price Bureau little thought. This does not mean that as long as prices show a tendency to increase there will be no difficulties in foreign trade. The English importer of American goods may have incurred obligations payable in dollars. To him exchange has gone up. He receives fewer dollars for his pound and it consequently requires a larger number of pounds to effect settlement. His profits are seriously impaired or destroyed. He makes the eminently sensible resolution that he will in the future make his purchases in a country whose currency is not subject to the "unpredictable vagaries" of the dollar. This will hardly gratify the American exporter and one need not be a seer to determine how long it will take him to find a goat or who it will be. However, this does not exhaust the troubles of the exporter. He has in many cases sold his

goods on a sterling basis. In converting his bill to dollar credits he discovers to his dismay that "exchange" has fallen almost five cents and that for every pound sterling he receives not \$4.8665 but \$4.818354. Now it is his turn to organize in a concerted drive on the Price Bureau. American politics will be provided with a new issue. Much ink will be shed. Much heat will be diffused from political platforms, from banquet tables and possibly even from pulpits. It must not be assumed that this subject will be thoroughly understood by the public or even the interested parties. It is not too great a stretch of the imagination to see men, absolutely sincere and honest, inspired by wrath and a sense of unmerited losses, attribute to this manipulation of the dollar most of the ills from which the day is suffering.

By no means does this complete the list of evils that one may reasonably anticipate in the field of foreign trade and exchange. Most of us know what an unreasoning and headstrong force national pride is. Repeatedly in the past has it balked the reformer in his various attempts to secure uniformity in such matters as customs nomenclature, passport practice, weights, measures, currency, etc., to say nothing of more ambitious projects. No candid student need ever apologize for the lack of that sentiment in the United States. Undoubtedly our institutions are the best. To modify them in an alien direction or to permit them to suffer by comparison with exotic standards is unthinkable. One wonders, therefore, what the effect on national pride would be of the disparagement of the dollar consequent upon a reduction in its gold content. In every market in the world where foreign exchange is bought and sold, there would be a realignment of norms of exchange in a direction that would be unflattering to the dollar. The pound, the peso, the lira, the mark, the franc, even the lowly Chinese tael, would all rise against the dollar. Would our patriots long tolerate such a deliberate humiliation of their native monetary standard? That such a feeling is a real and potent factor is hardly open to question. It is necessary only to recall the reluctance of Premier Poincare and Monsieur Mus-

solini in stabilizing their currencies on a gold basis when the opportunity was apparently at hand. National pride compelled them to adhere to a fatuous hope which the irrefragable logic of circumstances had not yet persuaded them to abandon. It is not unreasonable to assume that such action on the part of the Price Bureau would have far-reaching political consequences.

What effect would such a publicly conceded inferiority of the dollar have upon the esteem in which it is held at home? Mass psychology is often an irrational, inscrutable force. We know that unfavorable news from the front during the Civil War had its immediate effect upon the gold quotations of the dollar and that these changing valuations were ultimately reflected in altered price levels.³ J. van Walré de Bordes, in his account of the Austrian crown, gives us a much more conclusive illustration of the same phenomenon, one in which the force of the psychological factor is silhouetted sharply against a background of circumstances that provides the monetary theorist a splendid laboratory. For months at a time sharp fluctuations in the exchange rate were induced by announcements of the policies of the board of foreign exchange control and the news which emanated from Geneva concerning the assistance which the League of Nations proposed to grant Austria. Favorable news stimulated the supply of foreign exchange. Unfavorable news depressed the supply and sometimes eliminated it entirely.⁴ Prices and wages showed an almost immediate response to the changes in the rate of exchange.⁵ If we are wedded to a mechanistic theory of value and prices, we can determine precisely how much must be added to one side of a scale in order to make it balance, but, unfortunately, human nature does not yield to mathematical formulæ. Value is a semi-emotional, semi-rational expression which emerges from the involved psychic depths of man's nature. Basing the conjecture upon a knowledge of this capricious force, I would guess that a reduction of one per cent in the

³ Mitchell, W. C., *History of the Greenbacks*, pp. 217-218.

⁴ *Austrian Crown*, pp. 204-205.

⁵ *Ibid.*, p. 178.

gold content of the dollar would sometimes raise prices much more than one per cent.

Inasmuch as the change in the gold content of the dollar has seriously injured the legitimate equities of private persons, the question of responsibility, legal liability and damages may well be raised. The chain of cause and effect is clear and unmistakable. Importers and exporters have discovered their profits evaporating because of announced changes in the dollar. These changes were the result of deliberate decision by a governmental bureau to whom that power had been delegated by Congress. The losses, therefore, are directly dependent upon the action of this official body. It must be distinctly remembered that no analogy is here possible between the owner of a brewery, whose investment has suffered because of the passage of the Eighteenth Amendment, the purveyor of narcotics or the owner of slaves. The latter have stood in the way of an awakened moral sense held by a preponderant majority of the people. They have stood as obstacles in the progress of social justice or at least that which the people at the time honestly considered progress. There is in these latter cases a direct connection between those who suffer property loss and the evil which is being eliminated. If such individuals are sacrificed on the altar of humanity's hope for the better, it is not considered a contravention of our ethical standards. With the importers and exporters whose business and fortunes have suffered because of the fickle aberrations of the dollar, the circumstances are entirely different. There is no connection between their conduct and their peculiar property rights and the evils which the change in the dollar is supposed to remedy. They are innocent bystanders. They bear the brunt of this experiment without any visible corresponding benefit to anyone.

To insure the inviolability of property rights against arbitrary encroachment by the state the Fifth Amendment was added to the Constitution. "No person shall be . . . deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use,

without just compensation." The fact that a stabilization plan, if adopted by Congress, represents the will of the legislative body does not constitute all losses suffered by private individuals in the course of and due to its operation deprivation of property with "due process of law." The article is a definite limitation upon the power of the executive and legislative departments of the government and does not permit an interpretation which will clothe the will of Congress or the decision of an executive bureau with the sanctity of due process of law.⁶ It is impossible, therefore, to dismiss these injured parties as incidental social casualties whose fate is a matter of indifference in view of the magnitude of the benefits. That they will assert their rights need not be affirmed but may be taken for granted. If the Supreme Court sustains their contentions for which they apparently have substantial grounds, what then? Compensation suggests itself. That will require the creation of another bureau for the purpose of appraising losses and determining damages. A richer field for collusive frauds could scarcely be found. The imminence of a change in the gold equivalent of the dollar will always be betrayed by the index number which presumably will be available to the public whose interest in it and understanding of it will be cultivated.

With very little risk, and practically no cost, it will be possible for A and B, respectively an American and English Bank, to operate in the following fashion. The change in the index number has indicated the direction in which the dollar will be altered. Let us assume that this indication prophecies a decrease in the gold content of the dollar since the price level has dropped. A wishes to establish in England a fictitious credit and to accomplish this advises its English correspondent, B, to draw on it, A, to the extent of 1,000,000 sterling payable fifteen days after sight and credit the proceeds immediately to the account of A in B. Thus A apparently has the proceeds of a fifteen day draft on itself in an English bank, the necessity for which credit

⁶ *Murray v. Hoboken Land Co., etc.*, 18 How. 277.

can easily be explained in a variety of ways. The proceeds are used to settle mythical transactions. The draft comes across the Atlantic, is accepted and returned. An obligation has been created whereby the acceptor, the American bank, must pay the British institution 1,000,000 sterling fifteen days after acceptance. A few days after securing this "credit" the stabilization bureau announces the anticipated reduction in the weight of the dollar. It now contains but 22.9878 grains of pure gold. The exchange rates adjust themselves immediately to the new par of \$4.91666. The American banker raises audible lamentation to high heaven and especially to Washington. His grief is a serious matter. He has "borrowed" a million pounds for good and sufficient reason expecting to pay them back about twenty-three days later. Had it not been for the perverse meddlesomeness of the stabilization bureau, he could have purchased the sterling credit necessary for repayment with \$4,866,500.00. As it is, he must pay out \$4,916,666.66. This involves a loss of \$50,166.66, enough to stir the lachrymal emotions of even a banker. One can hear fervent apostrophes to the "dollar of our fathers" and encomiums upon the Gibraltar-like qualities of the dollar that was good enough for George Washington and Abraham Lincoln, a dollar which had too much self-respect to play hide and seek with worthy merchants who were trying to turn an honest penny in serving their country. After all, it is no great hardship to simulate grief if Uncle Sam stands ready to assuage your sorrow with \$50,166.66. True this must be divided with an accomplice but even the moiety is substantial. A moderately fertile imagination will suggest an infinite variety of "transactions" whereby the good intentions of Congress may be turned to immediate personal profit.

DEBTORS VS. CREDITORS AND THE FISHER PLAN

We have heard much of the injustice to debtors and creditors which has resulted from changing prices. The rise in the price level dissipates the equity of the creditor, its fall augments the burden of the debtor. Rising prices are

the boon of those that owe. Falling prices are the good fortune of those to whom payments are due. We have borne witness to the yeoman service performed by the poor working girl and her savings deposits in emphasizing this injustice. Willford King has estimated that the period of inflation, 1915-1920, caused the transfer of \$40,000,000,000 of wealth from creditors to debtors.⁷

In fact it would be difficult to discover a single class more ardently dedicated to justice between creditors and debtors than those who have advocated stabilization by this, that or the other plan. Particularly may this be said of those who advocate the principle of stabilization embodied in the two bills presented by Representative Goldsborough. It is, therefore, pertinent to examine the precise effects of this plan on the equities of the two above mentioned classes.

For our purpose we shall assume that no principle of stabilization can be justified if it is provincial in its incidence or concerned only with justice within a restricted area. We shall assume that such a plan should be no less interested in the obligation which extends across national boundaries and over the seas than with that whose origin and terminus are both within the same political area.

That these international obligations are stupendous will require but a moment to demonstrate. On May 3, 1926, foreign nations owed the United States government \$11,522,354,000.⁸ At the end of the same year, private American investments abroad amounted to \$11,215,000,000.⁹ Foreign investments in the United States at the end of 1926 totalled about \$3,000,000,000.¹⁰ We may assume for our purposes that we owe the world three billion dollars and that the world owes us twenty-three billion dollars. Keeping these facts in mind, let us pass the Goldsborough Bill and realize the sweet effects of stabilization by formula.

⁷ Stabilization Hearings, H. R. 11788, op. cit., p. 57.

⁸ *Combined Reports of the World War Foreign Debt Commission*, 1922-1926, Washington, 1927, p. 449.

⁹ *The Balance of International Payments of the United States*, 1926. Trade Information Bulletin, No. 503, Bureau of Foreign and Domestic Commerce, August, 1927, p. 13.

¹⁰ *Ibid.*, p. 15.

The price level shows a rise sufficient to induce our Bureau to increase the gold content of the dollar and by adding one per cent to its weight we now have a new dollar which contains 23.4522 grains of pure gold. A very interesting problem now presents itself. Does the world owe us dollars of the original metallic content or the new dollars? These foreign debtors, not being subject to the legal tender clauses of the Goldsborough Act, will doubtless define their obligations in the old dollar. If they succeed in maintaining this position, and there is no present reason for supposing that they would fail, American creditors would find themselves being repaid in dollars which had approximately one per cent less gold in them than the current legal units as defined by our Bureau. If this process should repeat itself ten or fifteen times the equity of the creditor would evaporate just as truly as it does when prices are rising and the purchasing power of each dollar is declining. If we remember that these obligations are to a considerable extent long time obligations, it can readily be seen that changes of such magnitude are entirely possible. The creditor, therefore, is no better off than he was when we had no sovereign remedy for the affliction of changing prices. There is this difference, however, between the two situations. When the general price level rises, it does not move by government fiat. Those who lose by the change can only complain of the unkindness of circumstances. Circumstances do not run for office. They do not occupy seats in Congress. They are immune to advice and anathema. They do not constitute the membership of price fixing bureaus. Creditors may pull their hair and weep but circumstances are impervious to the effects of emotion and reason. Furthermore, creditors still receive the same number of units and as Professor Fisher has pointed out, they very often do not realize the extent of their losses through rising prices and are in fact very often ignorant of the reality of such losses.¹¹

Moreover, not all prices move at the same time or at

¹¹ Stabilization Hearings, H. R. 11788, op. cit., pp. 5 and 19.

the same rate. The creditor still has his options and he can modify his expenditures in such a way as to incur but a small part of the loss which a rising price level involves. It is a commonplace of economics that rising prices of particular articles tend to curtail the demand for those articles to the extent that abstinence or substitution by the consumer is possible. The creditor upon receiving payment is not required to deprive his means of payment of one or two or ten per cent of their purchasing power because of a rise in the wholesale price level. He can still spend his funds for many things which have not responded to the influences which have caused other commodities to rise.

Therefore, the situation where the rise in the index of wholesale prices has apparently deprived the creditor of ten per cent of his equity and the situation where the creditor holding German industrial securities gets but \$90.00 instead of the \$100.00 invested are by no means identical. Under the latter the creditor is arbitrarily assured a loss of ten per cent. It is impossible, by the exercise of personal choice and judgment, for him to temper the extent of his loss. A bureau in Washington has obligingly relieved him of the responsibility. The loss, moreover, is defined with scientific precision. We no longer have nebulous value standards. The loss is exactly ten per cent, no more and no less. If the creditor is a mathematician and endowed with a passion for exactitude this precision may afford considerable comfort and may be reckoned as one of the imponderable psychic benefits of stabilization.

Under the latter there is no room for choice or reason in tempering the loss, nor can any creditor be left in doubt as to its extent or reality. A government bureau reminds him of it and by the same token also assumes responsibility for the change. It is the latter aspect which presents the most significant distinction between our two situations. We have already indicated that it is impossible to place a crop failure, an overproduction of gold, a fiscal deficit or a war on the stand and convict it. Events and conditions are not susceptible to prosecution or subject to conviction except

in so far as it is possible to make punitive gestures toward the principal actors. In the case of an alteration of the gold equivalent of the dollar which results in the loss of ten per cent of the investment, we do not have a combination of more or less inchoate circumstances to call before the bar but sentient human beings. The members of our bureau have made the decision and taken the steps which were the direct cause of the losses incurred. It is impossible for these victims to disappear behind the screen of anonymity or to disclaim responsibility. In the arena of American politics they will constitute the unwilling cast of a Roman Holiday.

It may well be that our poor working girl who went through the motions of abstinence only to discover that her deposits in the savings bank had sustained an illusory increase will now withdraw them and with the assurance provided by this plan invest in French power bonds. What will be the state of her feelings when she sells her bonds in her old age and finds that they bring less than she paid for them and that each dollar she now receives purchases not a whit more than the dollars she invested? Is there any assurance whatsoever that we shall be dealing more kindly with creditors and debtors under the Goldsborough standard than we have under the gold standard? True, this difficulty will emerge only where the creditor-debtor relationship traverses an international boundary but the magnitudes to which it applies are gaining in importance as the nation grows in its international contacts and increases its foreign investments. Carl Snyder has¹² estimated the total of corporation bonds and mortgages and federal, state and municipal bonds in this country at from sixty to seventy billions. We already have investment equities outside of our own borders fully one-third as great as this and it is impossible to ignore the effect of changes in the gold content of the dollar on these investments on the ground of quantitative unimportance.

Aside from investment, our economic activities impinge so broadly upon those of other states that it is difficult to

¹² *Business Cycles*, etc., op. cit., p. 206.

visualize the withering effect which frequent changes in our monetary standard in terms of gold would bring. There are the receipts for the use of the Panama Canal, the expenditures of the army and navy, of representation, of postage, of the department of state, in foreign countries. In 1926 the American government spent \$67,900,000 abroad, and received for other than war debt account \$16,900,000.¹³ The annual premiums on American insurance sold abroad amounted to \$80,000,000.¹⁴ At this writing Henry Ford is visiting his plants in England and on the continent of Europe. His cars when sold in England must be sold for pounds. If the weight of the dollar is increased because of a rise in the price level, it means that the price of his product in terms of dollars is automatically decreased. The same is true of all the other products which American manufacturers sell abroad. Shall they adjust their foreign prices five or six times each year in order to keep pace with changes in the weight of the dollar and maintain their legitimate profit margins? This is not an easy thing to do. Shall they write off their losses and charge them to the blessings of stability? It takes only elementary perception to appreciate the state of mind of men whose fortunes ebb and flow at the behest of a body in Washington.

On the other hand, let us see what happens to the protection which our tariff is supposed to provide when the weight of the dollar is increased. Let us assume that our rates on textiles are just sufficient to bar the products of the cheaply manned looms of Europe. The dollar as the result of an addition of one per cent now contains 23.4522 grains of pure gold and the new par with sterling is \$4.818354. Where the English textile manufacturer had to realize \$4.8665 in order to secure a return of one pound sterling, he must now receive but \$4.818354, a difference of more than five cents. He can afford to shave his prices by approximately one per cent and by virtue of this advantage dis-

¹³ *Trade Information Bulletin*, No. 503, op. cit., pp. 19-20.

¹⁴ *Idem*.

places a number of marginal producers in America. This may be well enough for the English manufacturer but what becomes of protection to the American? The course of a single year may bring five or six changes in the same direction which would give to the foreign producer all the advantage which the tariff was intended to deny. It will, therefore, be necessary to appoint another bureau which we may call a Tariff Synchronization Bureau whose duty it will be to effect changes in the tariff just sufficient to offset the effect of the changes in the weight of the dollar on the relative positions of the domestic and foreign producer. Undoubtedly that would provide added fascination to American political life. Looking at the other side, a drop in the price indicator calling for a diminution of the gold content of the dollar would have just the opposite effect on the ability of foreign producers to compete in our markets since they would now have to secure a higher price in American currency for their product in order to realize the same amount in their own currencies. Furthermore, the drop in the gold content of the domestic dollar would enhance the ability of American producers to compete in European markets since a given price in a foreign currency would yield a larger number of the lighter American dollars. May we raise the question as to the probability of the latter decision under a Republican administration? May we also ask if the integrity of the index number will be respected if its rise calls for an increase in the gold content of the dollar which in turn would have the same effect as the lowering of the tariff? How long will the "automatic" and "scientific" character of this device be sustained?

Finally, assuming that we have attained that sweetness and purity in political life and that freedom from the annoying influence of the desire for private gain in the individual and in economic groups, so that our Bureau in Washington could operate without ulterior pressure of any kind, what effect would the operation of this plan actually have upon prices? For this purpose we shall borrow our

monetary principles from Professor Fisher and make use of his equation of exchange.

$$P = \frac{MV + M'V'}{Q}$$

Where P is the general price level, M the quantity of money, V the velocity of circulation of money, M' the volume of bank credit, V' the velocity of circulation of bank credit and Q the volume of trade and production.

Let us assume that the price index has moved to 101, indicating that the value of the dollar is declining and calling for an increase in the gold load of the dollar to 23.4522 grains of pure gold. This immediately gives the foreign producer an advantage since it is the equivalent of an increase in the gold price of his product. Subsequent movements in the same direction will add to the effectiveness with which he can compete. From this fact a number of *a priori* possibilities emerge. We may argue that domestic production will be displaced to the extent that the newer gold content of the dollar attracts imports, that the displaced industrial energy will be devoted to the production of other commodities where we enjoy a special advantage and that the national income stream will carry on its broad bosom a richer freight of goods and services because our productive talents are being used more effectively and that prices, therefore, will be lower. Since that was the object of intervention, the Bureau can light a cigar, lean back in its easy chair and wait until the price index has the temerity to sustain another change. As an argument this has undoubted aesthetic charms. Of course, one should also indicate that the identical factors which created a favorable situation in this country for the foreign producer created an unfavorable situation in foreign markets for our own exports. We would, therefore, sell less wheat, less cotton, fewer cars, etc. to the rest of the world. While American enterprise was sustaining a loss of markets abroad, it was encountering a similar experience at home. As a conse-

quence of smaller exports and increased imports, the Q in our equation would swell, how far we do not know. Since it has been proposed that the Federal Reserve Banks co-operate with the price bureau in Washington they would doubtless raise the discount rate in order to make the action of the price bureau more effective. As a result of all this we are confronted with five cardinal factors whose significance requires no interpretation.

1. Loss by American enterprise of part of home market.
2. Loss by American enterprise of part of foreign market.
3. Rise in the discount rate and a general policy of credit restraint on the part of the Federal Reserve Banks.
4. As a result of credit and monetary restriction and more severe competition from abroad, there is in prospect a decline in prices.
5. The preceding four factors being the result of the deliberate decision of two bureaus in Washington.

There is every reason to believe that these factors would bring about a violent drop in prices which could not be arrested after it had proceeded one per cent. There is also every good reason to believe that it would bring about the sudden, if not violent, demise of the Bureau of Labor Statistics and the Bureau of the Mint.

The unpardonable defect of this plan is its utter failure to allow for human nature. Men will not tolerate economic tyranny of this kind. Most men are perfectly willing to take their chances and demand from their government only the opportunity to exploit changing conditions as and when they arrive. No intelligent community will ever accept or retain this monetary bib and bottle or permit a maternally minded government to tie the members to its apron strings. This plan is conceived in an abysmal ignorance of human nature. It is founded upon fallacious premises of human infallibility, bureaucratic omniscience, and social docility. Were all these postulates valid the plan would nevertheless fail, not moderately but completely, since international co-

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operation would be lacking and price changes instead of being imperceptible would in fact be precipitate.

In the chapters on the quantity theory of money and the influence of the discount rate further objections applicable to the Fisher Plan will be developed.

During the first session of the 68th Congress a bill, identical with that just discussed, was introduced by Representative Goldsborough (H.R. 494). The only change was the omission of section 10 of the previous bill relating to the government surplus and reserve. The hearings (Feb. 26, 1924) were again featured by the testimony of Professor Fisher.

THE TINNES PLAN

A word must be said here about the Tinnes Plan. Excepting only that it lacks the refinement in detail of the Fisher Plan the proposal of D. J. Tinnes is exactly the same as the plan contained in the Goldsborough Bill. Mr. Tinnes seems to resent the identification of his plan with that of Professor Fisher because, he contends, it operates on an entirely different principle and was moreover "discovered" about fifteen years before the "stabilized dollar" appeared before the public. The latter statement is true and Fisher himself acknowledges it.¹⁵

The alleged difference inheres chiefly in the theory on which the two plans are supposed to function. Fisher is an opportunist and does not insist, at least not in the hearings or in *Stabilizing the Dollar*, that the operation of the plan depends upon a literal acceptance of the quantity theory. He is more interested in the adoption of the proposal than in the vindication of the monetary theory upon which it is supposed to rest and is therefore silent on this point. One may gather that as the dollar increases in weight it will become more valuable directly because of its increased weight, or, indirectly, through a diminution in the supply. Thus the plan is allowed to appeal either to the bullionist or the quantity theorist. Not so with Mr. Tinnes. He insists

¹⁵ *Stabilizing the Dollar*, p. 294.

that his plan is the better because it eliminates the problem of lag since an increase in the weight of the dollar will immediately increase its "wantedness," i.e. the degree to which people will desire it and hence changes in the value will immediately follow changes in the weight. In other words Tinnes is a bullionist. Unfortunately he fails to explain how the public can be educated to a perception of the distinction between his plan and that of Professor Fisher. Like the Fisher Plan the Tinnes Plan discovered a champion in Congress and we find Representative Olger B. Burtness of North Dakota introducing it as H.R. 433 in the 1st Session of the 68th Congress. The Tinnes Plan never received the effective publicity which Fisher developed for his own scheme.¹⁸

In the meantime the advocates of stabilization were preparing for a new attempt to persuade Uncle Sam to commit himself to a definite policy of stabilization.

It was felt that the adoption of some measure was necessary and if Congress showed itself reluctant to embark upon a course which marked a radical departure from established currency policy then some plan would have to be devised which imposed less strain upon the conservative instincts of the legislative body. It seemed to a number of currency crusaders that the post war experience had proved the existence and effectiveness of two weapons of price control, both of which were already a part of the organic law. These two instruments were the discount rate and the open market operations of the Federal reserve banks. That these instruments had been used unwisely if not maliciously seemed to have been demonstrated by the deflation of 1920 and 1921. Their apparent effectiveness in causing this economic disaster argued for their suitability as the means for realizing a great social purpose, to wit, the stabilization of prices. It was necessary only that this power be directed into the

¹⁸ For a complete explanation of this plan see Tinnes, D. J. *The Market Gage Dollar*, American Economic Review, Sept., 1918, pp. 579-584 . . . , *An American Standard of Value*, American Economic Review, June, 1919, pp. 263-266. Hearings H. R. 494, 68th Congress, 1st Session, Feb. 26, 1924, pp. 43-48.

proper channels and administered for the general good. In line with this philosophy Representative James G. Strong of Kansas introduced the Strong Amendment to section 14 of the Federal Reserve Act which directed the Federal Reserve Board to use its discount rate power for the purpose of promoting stability in the price level. The amendment follows:

CHAPTER XI

Open Market and Discount Powers to Control the Price Level—The Original Strong Amendment—Testimony of Witnesses—Professor Irving Fisher—Dr. William T. Foster—Governor Norris—Professor Oliver W. Sprague—Dr. Adolph Miller—Governor Strong—Principles Which Guide the Board in the Administration of Credit—Summary of Criticism—Revised Strong Amendment—Criticism.

THE STRONG AMENDMENT ¹

A BILL to amend paragraph (d) of section 14 of the Federal Reserve Act, as amended, to provide for the stabilization of the price level for commodities in general.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That paragraph (d) of section 14 of the Federal Reserve Act as amended, is amended to read as follows:

“(d) To establish from time to time, subject to review and determination of the Federal Reserve Board, a minimum rate of discount to be charged by such bank for each class of paper, which shall be made with a view to accommodating commerce and promoting a stable price level for commodities in general. All of the powers of the Federal Reserve System shall be used for promoting stability in the price level.”²

The amendment strikes from the existing law the words “and business” and adds

“and promoting a stable price level for commodities in general. All of the powers of the Federal Reserve System shall be used for promoting stability in the price level.”

¹ (Hearings before the Com. on Banking and Currency, House of Representatives, 69 Congress, First Session, on H. R. 7895).

“A BILL TO AMEND PARAGRAPH (d) OF SECTION 14 OF THE FEDERAL RESERVE ACT, AS AMENDED, TO PROVIDE FOR THE STABILIZATION OF THE PRICE LEVEL FOR COMMODITIES IN GENERAL.” March 24, 1926, to Feb. 4, 1927. U. S. Gov. Printing Office, Washington. 1927.

² *Ibid.*, p. 1.

The word minimum in the second line was clearly a mistake and was so designated by Representative Strong. He explains that he has introduced the bill in order to carry out the direction of the constitution in which Congress is authorized 'to coin money and regulate the value thereof.' In belated compliance with this provision, Congress for the first time granted the power to regulate the value of money in the Federal Reserve Act but the power was on this occasion abused in the interest of the creditor class rather than for the purpose of stabilization³

Among the first witnesses to testify is Professor Irving Fisher.

His attitude toward stabilization appears to be much more moderate than in any of his previous publications or statements. He believes that the Federal Reserve Board is already trying in a certain diffident way to achieve stability and that it should not be hampered in this experimental period by rigid limitations.

Powers which the Federal Reserve Banks may exercise in the interest of stabilization are,

1. Rediscount rate
2. Open market operations
3. Substitution of gold certificates for Federal reserve notes and vice versa
4. Moral suasion.

He believes that while the Strong Bill will help, it does not offer a satisfactory long time solution, and that it would be much better to couple it with the Goldsborough Bill.

Norman Lombard, executive director of the Stable Money Association, follows Fisher and again rings the various changes on the evils of a fluctuating standard and the importance of stability. He quotes authority at great length in support, including parts of the Cunliffe Report to show that the policy of the Bank of England during the war was determined with one eye on the price level.⁴ He tries to

³ Hearings on H. R. 7895, p. 2. ⁴ *Ibid.*, par. 5, 6, 18, 19, 20, 21, p. 123.

make a case showing that the Federal Reserve Board took every possible legitimate measure to prevent post-war expansion except one—control of the discount rate, and that it was practically dragooned through fear of the application of the Overman Act into maintaining a rate of discount which was entirely too low and incapable of exercising the deterrent influence of a sharply advancing rate.

A rather conservative statement of Gov. W. P. G. Harding is offered which lends support to the belief that the Board failed to act because of Treasury pressure but does not imply that in the absence of restrictions and with the application of a higher discount rate the course of expansion might have been checked. In fact the opposite is stated explicitly. Referring to the sharp advance in the discount rate which might have been applied, he says,

"And it is not at all certain that even that would have been effective at a time when the public seemed to care little for expense." ⁵

William T. Foster, Director of the Pollack Foundation for Economic Research, summarizes his article written in collaboration with Catchings in the *Harvard Business Review* in April 1924:

1. The Board has used its powers in helping to stabilize the price level. The boom of 1923 was checked by the use of the discount rate and open market operations.
2. The powers of the Board while substantial and capable of helping the situation are not adequate to insure control and control can be effected only when subsidiary conditions are favorable.
3. A control of the quantity of money in circulation is not sufficient to secure stability in the price level.
4. It is well for the government and the Board to have price stability as its avowed aim, but it would be unfortunate if the impression became current that as the result of the passage of such a bill as this the Federal Reserve was actually endowed by the public mind with the power to control the price level, for the time would come when the Board would find itself unable to do this.⁶

⁵ *Ibid.*, p. 125.

⁶ *Ibid.*, p. 193.

Foster does not think that raising of the discount rate in 1920 had very much to do with deflation. Prices had reached a point where the incomes of the consuming public were unable to purchase all that was offered and in order to have goods sold their price had to come down. There was no consumers strike. The consumers stopped buying because they did not have enough money.

"Mr. MacGregor. You did not answer the question. Is it your view that the raising of the discount rate by the Federal reserve system had nothing at all to do with deflation?"

"Doctor Foster. The Federal reserve system can at any time bring some influence to bear on the situation by changes in rates. The point I made was that deflation would have come anyway."

There are times when expansion will take place and the same is true of recession in spite of anything the Federal Reserve Board can do. The member banks may not be dependent upon the Federal Reserve Banks.⁸

Stability cannot be achieved through controlling the currency supply for the time will come when the flow of funds to the consumers will be unable to buy the flow of consumers goods at the higher prices and a surplus of such goods will accumulate which can be removed only by lowering the price. Financial expansion does not affect the consumer as much as the producer for it is usually increased production which is financed rather than increased consumption.⁹

Professor Rogers is a firm believer in the power of the Federal Reserve Board to control prices.

"I am sure that in spite of any rise in prices, from any cause whatever, you can correct it if you adopt as drastic provisions as those of the Goldsborough Bill; and I maintain that in all ordinary cases the provisions of this bill (Strong Bill) will do it."¹⁰

He makes the previous statement in answer to a letter from Paul Warburg to Representative Strong appearing on the same page.

⁸ Hearings on H. R. 7895, p. 197.

⁹ *Ibid.*, p. 200.

¹⁰ *Ibid.*, pp. 200-201.

¹¹ *Ibid.*, p. 223.

"While, of course, I share your view that price stability is a thing devoutly to be wished for, I regret to say that I am not in sympathy at all with the amendment that you propose. No banking system, to my mind at least, can undertake to provide a stability of prices, and I believe it would be dangerous to place the Federal reserve system in a position where the responsibility for extreme fluctuations in price levels could be laid at its door. Naturally those in charge of the Federal reserve system should always watch most carefully fluctuations in the price level and fashion the policy of the system as far as it is practicable so as to combat excesses of inflation or deflation; but the powers of the central banking system in this regard are distinctly limited. Interest rates may be a contributing factor in affecting price levels, but to my mind they are only one of the many factors of all the world-wide economic forces at play which in the end determine price levels."¹¹

One of the most competent and most interesting witnesses to appear before the Committee was Benjamin Strong, Governor of the Federal Reserve Bank of New York.

He fears that the direction "All of the powers of the Federal reserve system shall be used for promoting stability in the price level" will be misunderstood by a great many people to mean that the power to stabilize prices actually exists and that Congress has given a mandate to a group of men to maintain stability.¹²

Such a power would not be acceptable in a democracy and he does not think "that any such power exists or can be created to fix prices."

Inasmuch as the bill has been inspired by the plight of the farmers it is entirely possible that it is intended as a specific for the ills of the farmer or may be interpreted by him as such.¹³

The average mind does not and perhaps is unable to distinguish between general prices and individual prices and if a mandate is given to the Federal Reserve Board to maintain the general price level, it will certainly be assumed as a mandate to maintain the prices in which various individuals are particularly interested.

¹¹ *Ibid.*, p. 223.

¹² *Ibid.*, p. 202.

¹³ *Ibid.*, p. 203.

If the power to control prices does exist, how is its abuse going to be safeguarded? What provision will be made to take care of divided counsels? What insurance will there be against human stupidity or selfishness on the part of members of the Board?

He points to the clash of interest between consumer and producer. Man in one capacity is interested in advancing prices, in another in depressing prices. The Board will receive no credit from either side but will assuredly collect all the blame,¹⁴ to illustrate which he cites the proverbial case of the Irishman and his wife and the fate of the mediator.

The danger of moral suasion by the Board is the danger that is inherent in all advice, which is, that it might be misinterpreted.

In this view Governor Norris, of the Federal Reserve Bank of Philadelphia, concurs. It is his conviction that the officers of a member bank know more about their own particular business than he does and it would, therefore, be presumptuous on his part to offer them advice as to how to conduct it. Again, circular advice of a general character would be extremely dangerous. Conditions might develop which would indicate the growth of an unsound expansion. Advice to member banks to curtail their loans would involve great responsibility and lead to disastrous results. Federal Reserve Bank guidance has been very much exaggerated in its use and effect.¹⁵

Governor Strong concedes that in certain particular instances it would be possible to affect the credit situation radically through direct pressure upon individual banks.

The important banks in New York make daily reports to the Federal Reserve Bank showing what their call loans are, what they are borrowing, what their reserve is and what the required reserve of each bank is from day to day. Since the required reserve is calculated on a weekly basis, the reserve bank can tell whether the member bank will be long or short at the end of the week. It can tell ahead of time what the weekly statement is going to look like. If

¹⁴ Hearings on H. R. 7895, p. 295.

¹⁵ *Ibid.*, p. 394.

the reserve bank finds that a member bank is a continuous borrower, and has other means of adjusting its reserves a conference is invited and the bank is advised in a tactful manner that it might be wiser to reduce its commitments in the form of call loans, that the extension of a large volume of call loans contemporaneously with heavy and continuous borrowings from the Federal Reserve Bank is inconsistent with sound banking policy. "If we talked with 10 or 12 or 15 of the large banks about the matter—and they do not desire to borrow from us continuously anyway—we could easily create a situation where there was a heavy demand for money in New York and no one willing to loan;" ¹⁶

The bill frankly contemplates the use of the discount rate and open market operations to achieve stabilization. Since Governor Strong is Chairman of the Open Market Committee of the Federal Reserve System, his testimony deserves great weight. This Committee was first organized in May 1922, and then reorganized in the spring of 1923. The purpose of the Committee is to co-ordinate the buying of the banks in the open market and to enable the system to work in greater harmony with the Treasury. It buys and sells securities for the system as a whole and executes orders for foreign banks of issue which maintain balances with the Federal Reserve Banks and wish those balances profitably employed. New York is the principal market and most of the operations of the Committee are carried on there.

The essentially passive attitude of the Committee is indicated in the following question and answer:

"The Chairman. Suppose your Committee should decide they wanted to buy \$100,000,000 of open-market bills." ¹⁷

"Governor Strong. One was the question asked as to a decision which might be made by the open market committee to purchase, say, \$100,000,000 of bills. My answer might have led to the conclusion that such a decision was made at times. That is not the way bills are purchased for the system. We do not go into the market and buy them, making a decision on our own

¹⁶ *Ibid.*, p. 456.

¹⁷ *Ibid.*, p. 315.

initiative to buy a certain quantity of bills. There is a rate established, at which we are known always to be willing to take bills from the market, and they just come to us at that rate as the banks offer them, and rapidly as they come they are divided up by the committee, partly to fill orders received from foreign banks which have balances with us for investment and partly divided among the other reserve banks in certain proportions which are fixed from time to time by the committee with the approval of each participating bank. So, the possible inference from my answer that, in the purchase of bills—that is, acceptances—we take that affirmative initiative, is not accurate. We simply buy bills which are offered to us in the usual course of business, mainly by the member banks in New York.”¹⁸

Since the bills purchased in the open market are almost invariably those which arise from commerce, especially our foreign trade, the amount of bills offered necessarily depends upon the number of transactions which take place. They are a function of trade activity and not the result of the designs of the Federal Reserve Board. The changes in bill holdings are seasonal changes and reflect the change in commercial activity which attends the change in seasons. The great bulk are based upon primary commodities, cotton, grain, sugar, coffee, silk, wool, hides and skins, copper, lard and meats, flour, tobacco, rubber, cotton manufactures, wood pulp, lumber furs, farm implements, “representing the flow of goods in the commerce of the country, mainly with foreign countries.”¹⁹

Governor George W. Norris of the Federal Reserve Bank of Philadelphia confirms this statement of the essentially passive position of the Federal Reserve Banks. They supply the credit to member banks who in turn extend it to their own clients. The Federal Reserve Banks cannot initiate a demand for it. They cannot vend it on the streets. Such influence as they have is exerted through three channels, general influence on members, the discount rate, and open market operations.²⁰

The Federal Reserve Banks never solicit borrowings from member banks and only in the most extreme cases ever

¹⁸ Hearings on H. R. 7895, p. 316.

¹⁹ *Ibid.*, p. 324.

²⁰ *Ibid.*, p. 385.

urge repayment. Credit creation and contraction depend solely upon the initiative of the member banks. When a member bank comes in for an additional loan, it means that it has already extended the credit to its own clients for which the proceeds of this loan from the Federal Reserve Bank will serve as a reserve. Credit expansion has already taken place and any deterrent influence which a higher discount rate may exert can come therefore only after the event.²¹

He thinks that the open market operations are entirely too small to affect the price level. At best they constitute only one-fiftieth of the total banking credit available.²²

Furthermore, the open market operations of the Federal Reserve Banks are directed toward the remedying of local conditions, i.e., a plethora or scarcity in local money markets.²³

In summing up the testimony of Governor Strong, Representative Goldsborough requests the verification of the interpretation which he places upon that testimony, i.e., that Governor Strong's chief objection to the amendment is the possibility of "the misapprehensions that might arise in the minds of the public as to the scope of the legislation." The Representative feels that there should be a more valid objection to the bill.²⁴

Mr. McFadden, the chairman, also adds his own impression of the testimony, namely, that the Governor felt that any specific enumeration of powers already fully exercised by the banks under a general grant of power would tend to restrict the latter and correspondingly impair the ability of the banks to remedy the very situations for whose correction this amendment was proposed.²⁵

In response to Goldsborough's question, Governor Strong summarizes his attitude in the following words:

"I believe that an administration of credit such as is afforded by the Federal reserve system, is capable of exerting an influence upon the volume of credit employed by the country and an in-

²¹ *Ibid.*, p. 389.

²² *Ibid.*, p. 390.

²³ *Ibid.*, p. 392.

²⁴ *Ibid.*, p. 549.

²⁵ *Idem.*

fluence upon the cost of that credit, and, within the limitations which the volume of credit and the cost of credit exert an influence upon the price level and only within that limitation can the operations of the Federal reserve system influence prices, that is, the general price level; that there will be times when even the power to somewhat regulate the volume of credit and its cost will fail of complete or anything like complete regulation of the price level, because there are many other things far beyond the control of the influence of credit, that is, the volume and cost of credit, such as the mood of the people.

"Therefore, if any expression is contained in the Federal reserve act which appears to represent to the people that the Federal reserve system can do more in stabilizing the price level than the limited control of credit is capable of performing, I am afraid that disappointment will come when there are fluctuations of prices which cannot be controlled within the strict limitations I have described. This may be an inadequate and lame explanation of what I have in mind, but I can elaborate it by an example, possibly.

"As Professor Sprague says, I firmly believe that when the Federal reserve system has an adequate volume of earning assets—that is, discounts or investments—it has a very considerable capacity to control a runaway movement of prices, because it can continue to force the banks to borrow and advance the discount rate and apply the pressure of high discount rates which, in time, becomes effective. But when you get to a decline in prices, one of those insidious periods of liquidation, and not a sharp movement like in 1920 and 1921, but one of those very difficult slow price movements, possibly, not attributable to credit operations at all, what is the Federal reserve system to do? There is a present decline of prices. Let us suppose that the present decline is caused by this. Possibly the spirit of optimism of last year has resulted in all merchants contracting for goods which they expected to sell but are unable to sell when delivered; in other words, there is an overstocking of goods beyond what the trade will consume or the people will consume. If there is a margin of goods for sale beyond the capacity for consumption, the introduction of more credit into the credit system will not correct that until the goods are consumed, and that situation rises in the form of contracts long before it can be detected in any reports on volume of business, inventories, or anything of that sort. The amount of goods being transported over the railroads will be just the same. The amount of employment will be just the same. Everything will be marching along with all outward evidence of a sound business situation, but when the public, for one or

another reason, slows down in buying and consuming goods that starts a declining price movement, I do not see how we can correct it." ²⁶

Governor Strong felt that if Congress considered it wise to endorse the exercise of the powers of the Federal Reserve Banks for the purpose of promoting stability, it would be far better to state that as one of the general purposes of the act in the title of the act rather than as a specific clause in a particular section of the act which defines one of the powers of the banks. In the former case, it will render congressional approbation to the purpose for which the broad powers of the Federal reserve banks have already been employed. In the latter case, it would appear more as a definite mandate in connection with one of many powers all of which might be devoted, as, in fact, they already have been, to the stabilization of business.²⁷

If stabilization be the purpose of this amendment, avers the Governor, then it cannot be considered complete unless it contains an openly avowed approval of the gold standard and a definite direction to use all the powers of the Federal reserve system to encourage its early reestablishment throughout the world. The farmer requires a certain market for the surplus products which he cannot dispose of at home. The first essential to constant and effective purchasing power abroad is a stable currency and this, in the opinion of Governor Strong, is preeminently identified with the gold standard.²⁸

Governor Strong believes that a good deal of the special responsibilities which at present attach to the proper management of credit and reserves will disappear as soon as the world returns to the gold standard. When normal gold movements again become the rule, the adjustment of prices will be automatic and a greater degree of stability will be attained than is possible by any system of management.

"I keep getting back to the subject of the gold standard, Mr. Chairman, because I have great confidence that when the time

²⁶ *Ibid.*, p. 550.

²⁷ *Ibid.*, p. 551.

²⁸ *Idem.*

comes to conduct these things as they were in former years, a lot of the need for the type of management which has to be applied in the present situation will be eliminated. It will be more automatic. We won't have to depend so much on judgment, and we can rely more on the play of natural forces and their reaction on prices, such as I have very roughly and inadequately described."²⁹

As to the responsibility for the maintenance of stable prices, Governor Norris testified:

"It is not one of the functions of a Federal reserve bank to determine whether prices of either stocks or commodities are too high or too low or to make any effort to raise or lower such prices. It was never the intention of Congress to give any such power to the system. It would be a very dangerous power to place in the hands of any man or group of men, no matter how wise or altruistic they may be. It is a power the American people would never be willing to trust to any board or commission, and it is safe to say that it is a power that the Federal reserve banks will never attempt to exercise."³⁰

Is it desirable for the Federal reserve system or any other agency to attempt to stabilize prices?

While the price level may be influenced at times by the cost of credit yet the interest paid for credit bought is a very small factor in the cost of production and the difference between securing money at 4% and securing it at 5% or 6% is practically negligible as far as the cost of the final product is concerned. If a price movement is under way and someone attempts to change or stop it, there will be introduced a new factor of uncertainty into business in that no one will know exactly what the effect of interference is going to be and business will, in the interval of awaiting the issue, be in a state of unstable equilibrium.³¹

Under price stabilization the normal influence of an improvement in methods of production could not be realized and this might well have a disastrous effect on our foreign trade. If we maintain prices at a stable level and the general level of prices in France and Germany should decline

²⁹ Hearings on H. R. 7895, p. 379.

³⁰ *Ibid.*, p. 380.

³¹ *Ibid.*, p. 381.

because of improved technical processes in production, such a developing disparity in prices would result in the gradual exclusion of American exports from world markets.³²

The system should give consideration to price movements and if stabilization be limited to minimizing price movements and "to cut off the peaks and smooth out the extreme hollows" the system should do this. It not only can be done but has been done.³³

The Federal reserve system "as a body have followed the policy, as far as it lay within their power under the existing law, of stabilizing credits to the extent that stabilization of credits might have influenced prices."³⁴

Professor Oliver W. Sprague does not think very highly of the ability of the Federal reserve bank to control ordinary fluctuations in the price level.

"I am very certain in my own mind that it is not possible to handle the ordinary oscillations of prices effectively by means of reserve bank operations."³⁵

He does not agree with Foster that a real inflation was starting in 1923 since agricultural communities had not yet cleared away the wreckage of the disaster of 1920 and agricultural prices failed to register any of the effects of inflation. In every inflationary movement, the prices of farm products either lead the way or at least play a prominent part. This was not the case in 1923. Neither does he attribute the subsequent toning down to the deliberate policy of the Federal reserve banks. The open market investment committee may have had the correction of that situation very definitely in mind in shaping their own conduct but Sprague believes that the fortunate effects were a matter of coincidence rather than the effects of Federal reserve policy.³⁶

He feels the same way about the decline of prices in 1920. This should not be attributed to the Federal reserve banks.³⁷

³² *Ibid.*, pp. 382-383.

³³ *Ibid.*, p. 395.

³⁴ *Ibid.*, p. 396.

³⁵ *Ibid.*, p. 408, same effect p. 415.

³⁶ *Ibid.*, p. 412.

³⁷ *Ibid.*, p. 415.

Mr. Goldsborough urges an interesting point in favor of the proposed amendment or any amendment of similar import. He concedes that the system has been ably managed for the last few years and attributes this largely to the intelligent human element which enabled the system to realize, without specific mandate from Congress, the very purpose which Congress would have wished had it articulated on the subject. There is, however, no assurance that the same highminded and able management would continue into the future. There is a substantial possibility that the direction of the system may fall into unworthy or incompetent hands in which case the powers which have been used for the highest public purpose during the past may be exploited by obtuse stupidity or sinister corruption on behalf of favored individuals, classes or sections. An explicit direction in the act to use the powers conferred for the purpose of maintaining stability may well serve as a watchdog to preserve this splendid instrument from corrosive encroachment or predatory vitiation.³⁸

There is a temptation at this point to speculate on the effect which such a clause might have had on government financing during the war. If this power had been used to combat the Treasury's indirect methods of inflation, if it had compelled the government to float its loans at the market rate of interest rather than at one established at an artificially low point at the behest of a fiscal officer, what would Congress have said? If the government had depended upon the accumulated capital of the country rather than upon the credit of its banking system for the purchase of its bonds to what class would the higher interest have been paid? These questions suggest interesting answers.

Governor Strong indicates some of the major causes of inflation in the attempted modification of which the powers of the Federal reserve banks would have little effect.

1. A deterioration in the management of the system. It might fall into incompetent hands and the machinery of credit run amuck.³⁹

³⁸ Hearings on H. R. 7895, p. 552.

³⁹ *Ibid.*, p. 556.

2. The administration of the Treasury. If the latter should borrow huge sums from the Federal Reserve banks, nothing could prevent an inflationary movement.⁴⁰
3. Congressional action, e.g., change in the reserve requirements,⁴¹ immediate credit for items in transit, interest payments on deposits.
4. Importation of large supplies of gold at a time when the earning assets of the Federal reserve banks are low.⁴²

Arresting a deflation of credit constitutes the most difficult problem which the Federal reserve system can have to face. If the loss of our foreign markets for farm produce should result in a drop in price of farm products, any effort to so manipulate credit as to arrest this fall might well do more harm than good. The Department of Labor index of prices is heavily weighted as to food and farm commodities, these constituting 53% of the total, so that any change in world conditions which determine these prices would have a pronounced effect on the general level as indicated by this gauge.⁴³

Dr. Adolph C. Miller represented the Federal Reserve Board at the hearings. To some members of the committee his testimony was unsatisfactory. This attitude was reflected in the release of the Stable Money Association, dated April 20, 1926, at Washington, headed: "The Reserve Board has no Policy," which alleges, among other things, "—that there is no training school for central bankers and that commercial bankers have no concept of the functions of a central bank, the admissions of Doctor Miller that the Federal Reserve Board is frequently divided in its counsels, and is guided by no stated policy in its control over the volume of credit, has caused a profound sensation."

A statement of the witness is quoted:

" 'The members of the Federal reserve system are not economic statesmen,' said Doctor Miller, 'and they are frequently in the dark as to the consequences of their acts.' " ⁴⁴

⁴⁰ *Idem.*

⁴¹ *Ibid.*, p. 577.

⁴² *Idem.*

⁴³ *Ibid.*, p. 735.

⁴⁴ *Ibid.*, p. 565.

If one holds that monetary theory is an exact science where effect follows ascertainable cause as inexorably as the sum of two and two must be four, such statements must be painfully lacking in sustaining qualities.

Dr. Miller showed a distinct reluctance to answer hypothetical questions. His argument was that no two credit situations are ever alike. Therefore no situation like the hypothetical one would ever occur. An attempt to state in advance what the attitude of the Board would be in mythical premises, therefore, would be productive only of misunderstanding if in the future a situation roughly similar to the one premised should develop in which the Federal Reserve Board, due to some essential difference not apparent to the ordinary observer, applied a policy different than that offered. It is an attitude similar to that taken by the Supreme Court of the United States on the matter of advisory judgments. It will give no decisions except in actual cases and Doctor Miller stood on good ground in taking the same position.

The principles which guide the Federal Reserve Board are still necessarily inchoate. This is due entirely to the fact that the system is still in its adolescence and the men who guide it are insufficiently equipped with knowledge of banking facts no less than with experience. He does look forward to the day when the Board shall have developed what Bagehot calls a "judicious routine" and he, "effective procedure." There are signs, therefore, that a subtle doctrine of *stare decisis* is at work which will provide Federal reserve board members of the future with a more definite guide than they have to date been able to develop.⁴⁵

"... so far as it may be said that anything in the nature of a formulated procedure exists in the Federal reserve system," the following passage from the Annual Report of the Federal Reserve Board for 1923, "comes perhaps as near expressing it as anything."⁴⁶

"Under an effective international gold standard the movements of gold among the money markets of the world exercised a cor-

⁴⁵ Hearings on H. R. 7895, p. 727. ⁴⁶ *Ibid.*, p. 636.

rective influence on exchange rates, tended to equalize money rates in various countries, and to keep domestic price levels in line with the world price level. In these circumstances, changes in the reserve ratios of the various central banks served as valuable indicators of the changes in the credit and trade relations of the countries and were consequently important guides in the shaping of discount policies. Under the present conditions, with gold embargoes in force in most foreign countries and the United States practically the only free gold market of the world, the movement of gold to this country does not reflect the relative position of the money markets nor does the movement give rise to corrective influences, working through exchanges, money rates, and price levels, which tend to reverse the flow. The significance which movements in the reserve ratios formerly possessed rested upon the fact that they were the visible indicators of the operation of the nicely adjusted mechanism of international finance. With this mechanism now inoperative, the ratios have lost much of their value as administrative guides. It has therefore been necessary for banking administration even in those countries that have been most successful in maintaining a connection with the gold standard to develop or devise other working bases. This has been as true in the United States where the gold standard has been consistently maintained as in other countries where that standard is for the time being inoperative.

"The anomalous situation thus confronting central banking administration in all countries has led to much discussion in the United States and elsewhere as to workable substitutes for reserve ratios as guides to credit and currency administration. Particular prominence has been given in discussions of new proposals to the suggestion frequently made that the credit issuing from the Federal reserve banks should be regulated with immediate reference to the price level, particularly in such manner as to avoid fluctuations of general prices. Entirely apart from the difficult administrative problems that would arise in connection with the adoption of the price index as a guide and entirely apart from the serious political difficulties which would attend a system of credit administration based on prices, there is no reason for believing that the results attained would be as satisfactory as can be reached by other means economically valid and administratively practicable. In saying this the board is not unmindful of the abundant evidence recent years have given of the economic and business disturbances occasioned by violent fluctuations of prices. But it must not be overlooked that price fluctuations proceed from a great variety of causes, most of which lie outside the range of influence of the credit system. No credit system could

undertake to perform the function of regulating credit by reference to prices without failing in the endeavor.

"The price situation and the credit situation are no doubt frequently involved in one another, but the interrelationship of prices and credit is too complex to admit of any simple statement, still less of a formula of invariable application. An oversimplified statement of complex problems contributes nothing toward the development of an effective administrative procedure. It is the view of the Federal Reserve Board that the price situation and the credit situation, while sometimes closely related, are nevertheless not related to one another as simple cause and effect; they are rather both to be regarded as the outcome of common causes that work in the economic and business situation. The same conditions which predispose to a rise of prices also predispose to an increased demand for credit. The demand for credit is conditioned upon the business outlook. Credit is created in increasing volume only as the community wishes to use more credit—when the opportunity for the employment of credit appears more profitable. Sometimes borrowers want to borrow more and sometimes they are content with less. Sometimes lenders are ready to lend more and at other times less. Why this should be so depends on all those multifarious conditions and circumstances that affect the temper of the business community. For the most part these conditions lie beyond the radius of action of the Federal reserve banks. When the business outlook is inviting business men are apt to adventure and new business commitments are made in increasing volume. But only later will these commitments be reflected in the possible rise of prices and an increase in the volume of credit provided by the commercial banks of the country. The Federal reserve banks will not to any considerable extent feel the impact of the increased demand for credit until the whole train of antecedent circumstances which has occasioned it is well advanced on its course; that is, until a forward movement of business, no matter from what impulse it is proceeding, has gained momentum.

"Credit administration must be cognizant of what is under way or in process in the movement of business before it is registered in the price index. The price index records an accomplished fact. Good credit administration in times of active business expansion should not encourage or assist the excessive accumulation of forward commitments in business and banking which only later on will definitely reflect the rate at which they have been taking place in resulting changes of credit volume and changes of price levels; and in times of business reaction should discourage enforced liquidation of past commitments which also will only later

on reflect the rate at which it has been taking place in altered credit volume and price levels. The problem of efficient credit administration is, therefore, largely a question of timeliness of action.

"No statistical mechanism alone, however carefully contrived, can furnish an adequate guide to credit administration. Credit is an intensely human institution and as such reflects the moods and impulses of the community—its hopes, its fears, its expectations. The business and credit situation at any particular time is weighted and charged with these invisible factors. They are elusive and can not be fitted into any mechanical formula, but the fact that they are refractory to methods of the statistical laboratory makes them neither nonexistent nor nonimportant. They are factors which must always patiently and skillfully be evaluated as best they may and dealt with in any banking administration that is animated by a desire to secure to the community the results of an efficient credit system. In its ultimate analysis credit administration is not a matter of mechanical rules, but is and must be a matter of judgment—of judgment concerning each specific credit situation at the particular moment of time when it has arisen or is developing.

"There are among these factors a sufficient number which are determinable in their character, and also measurable, to relieve the problem of credit administration of much of its indefiniteness, and therefore give to it a substantial foundation of ascertainable fact." ⁴⁷

The hearings on the Strong amendment were quite exhaustive. They extended from March 24, 1926 to February 4, 1927, and occupied 22 days, the testimony covering more than 1100 pages. Among others who testified, in addition to those whose testimony has already been mentioned, were Professor Robert A. Lehfeldt, Professor John R. Commons, Walter W. Stewart, W. R. Burgess, Carl Snyder and Major J. R. Bellerby.

Professors Fisher, Rogers, Commons and several members of the committee, including Representatives Goldsborough and Strong, seemed to feel that the Federal Reserve Board could control the price level with the aid of the powers granted in the amendment. In fact, as we have seen, some of them charged that the Federal Reserve Banks had al-

⁴⁷ (*Annual Report of the Federal Reserve Board, 1923, pp. 30-32*).

ready used their powers for this purpose. On the other side, we find arrayed most of the members of the committee, Professor Sprague and all the officials of the Federal Reserve System who testified.

The attitude of the opposition may be summarized as follows:

1. It is impossible and dangerous to attempt to control the price level within precise limits.
2. Insofar as the Federal reserve banks have that power it has already been exercised to diminish the frequency of depressions and allay their severity.
3. There are many price situations in which the system would be helpless in attempting to regulate the course of prices.
4. A further definition of the powers of the Federal Reserve Board might well serve to restrict the powers of that body to those enumerated and therefore impair the ability of that body to use its discretion in solving problems which a future might bring.
5. A further definition of power with the avowed object of stabilization of the price level might be productive of grave misunderstanding as to the duties and capacity of the Federal Reserve Board.
6. Stabilization will be promoted much more effectively by the return of the gold standard throughout the world and by the encouragement and proper reward of able leadership in the system.

Toward the conclusion of the hearings and as a result of some of the testimony given, Representative Strong offered the following revision of the original amendment.

STRONG AMENDMENT, REVISED

THIRD REVISION, JANUARY 30, 1927, OF H. R. 7895, SIXTY-NINTH CONGRESS, FIRST SESSION

AN ACT To amend the act approved December 23, 1913, known as the Federal reserve act, to maintain the gold standard, to prevent inflation and contraction, to promote the stability of commerce, business, and agriculture, to promote economic justice between creditors

and debtors, between bondholders and stockholders, and between the parties to all contracts into which time and money enter by providing a more stable money, and for other purpose

Be it enacted by the Senate and the House of Representatives of the United States of America in Congress assembled, That the act approved December 23, 1913, known as the Federal reserve act, as amended, be further amended as follows:

Amend paragraph (d) of section 14 to read as follows:

“To establish from time to time, subject to review and determination by the Federal Reserve Board, rates of discount to be charged by the Federal reserve bank for each class of paper, which shall be fixed with a view to accommodating and stabilizing commerce, business, and agriculture.

Add to section 14 the following paragraphs:

“(f) The Federal Reserve Board and the Federal reserve banks and committees, commissions, boards, agents, and servants under their direction, supervision, or control, shall use the powers and activities granted or authorized by the Federal reserve act and subsequent acts or amendments thereto, including open-market operations and other activities, in so far as they have any effect thereon, with a view to regulating the volume of credit, currency, and money in circulation so as to prevent inflation and contraction and thereby to stabilize, so far as may be, the purchasing power of the dollar in terms of commodities in general; but nothing herein shall be construed as enlarging or extending any of the existing powers of the Federal Reserve Board in this respect or as authorizing any interference with the natural tendency of prices of specific commodities or groups of commodities to vary among themselves under the influence of demand and supply.

“(g) The Federal Reserve Board shall formulate an index number which shall reflect the current purchasing power of the dollar in terms of commodities in general and shall make the same public at least as often as monthly. It shall publish the commodities, quantities, weights, formula, sources of information, data, and methods used in calculating such index number and shall publish immediately any changes made in such list, quantities, weights, formula, sources of information, data or methods so used.

ALTERNATIVE

"(g) In complying with the terms of this act and particularly with the foregoing section, the index number of wholesale commodity prices prepared and published by the Bureau of Labor Statistics, United States Department of Labor, shall be taken as the index of the current price level and of the purchasing power of the dollar, provided that should the publication of such index number be discontinued, or if in the opinion of the Federal Reserve Board it is desirable to do so, then the Federal Reserve Board shall formulate an index number which shall reflect the current purchasing power of the dollar in terms of commodities in general and shall make the same public at least as often as monthly. It shall publish the commodities, quantities, weights, formula, sources of information, data and methods used in calculating such index number and shall publish immediately any changes made in such list, quantities, weights, formula, sources of information, data, or methods so used.

"(h) Whenever any decision affecting or tending to affect changes in the rate of rediscount, or having to do with purchases or sales in the open market or otherwise affecting or tending to affect the volume of credit or currency or money in circulation, shall be made by the Federal Reserve Board, by the board of directors of any Federal reserve bank, or by any committee, commission, or board having jurisdiction in such matters, such decision and the reasons therefore shall be published immediately, and minority opinions of those dissenting from such decision or reason shall be published simultaneously; *Provided*, That the stated reasons for or against any such decision may be withheld if their publication shall be deemed by the governor of the Federal Reserve Board incompatible with the public interest."

After section 28, add the following:

"Sec. 28A. The Federal Reserve Board is hereby directed to make or cause to be made under its direction a comprehensive study of:

"(1) The limitations upon the effectiveness of any action which may be taken by the Federal Reserve Board or the Federal reserve bank or by agencies under their control to secure stabilization in the purchasing power of the dollar by influencing the volume of credit, currency, and money in circulation.

"(2) The extent of the influence of the activities of agencies of the Government of the United States or banks not under the control or influence of the Federal Reserve Board, or of any other agency or agencies upon the volume of credit, currency, and

money in circulation, and hence on the purchasing power of the dollar.

"(3) The effect upon the purchasing power of the dollar of fluctuations in the supply of and demand for gold as effected by new discoveries and improved mining methods, the use of gold in the arts, and by imports and exports of gold and otherwise, and

"(4) Available and proposed plans and means having for their aim the stabilization of the purchasing power of the dollar.

"Sec. 28B. The Federal Reserve Board shall report to the Congress the results of such study and shall recommend to the Congress such legislation as, in its judgment, will best promote such stabilization."

ALTERNATIVE TO SECTION 28A AND SECTION 28B

"There is hereby created a commission to be known as the stable money commission, which shall consist of five Senators to be appointed by the President of the Senate and five Representatives to be appointed by the Speaker and five members to be appointed by the President of the United States.

"Said commission shall make a comprehensive study of:

"(1) The limitations upon the effectiveness of any action which may be taken by the Federal Reserve Board or the Federal reserve banks or by agencies under their control to secure stabilization in the purchasing power of the dollar by influencing the volume of credit, currency, and money in circulation.

"(2) The extent of the influence of the activities of agencies of the Government of the United States or banks not under the control or influence of the Federal Reserve Board, or of any other agency or agencies upon the volume of credit, currency, and money in circulation, and hence on the purchasing power of the dollar.

"(3) The effect upon the purchasing power of the dollar of fluctuations in the supply of and demand for gold as affected by new discoveries and improved mining methods, the use of gold in the arts, and by imports and exports of gold and otherwise, and

"(4) Available and proposed plans and means having for their aim the stabilization of the purchasing power of the dollar.

"The commission shall include in its report recommendation for legislation which in its opinion will best promote the stabilization of the purchasing power of the dollar.

"The commission shall elect its chairman, and vacancies occurring in the membership of the commission shall be filled in the same manner as the original appointments.

"The commission is authorized to sit during the sessions or recesses of Congress, to send for persons and papers, to admin-

ister oaths, to summon and compel the attendance of witnesses, and to employ such personal services and incur such expenses as may be necessary to carry out the purpose of this resolution." ⁴⁸

It is not necessary to point out that the revised preamble of the Federal Reserve Act presents an ambitious program. If the State is to embrace the promotion of "economic justice between creditors and debtors" as one of its legitimate objects, why stop there? Is economic justice between debtor and creditor any more important than economic justice between labor and capital, between the farmer and the city dweller, between producer and distributor, between tenant and landlord? Is it not a bit premature in our social development to establish the administration of economic justice as the end of government?

Section (f) in effect urges the Federal Reserve Board to use all its powers, including the rediscount rate and open market operations, in order to regulate the "volume of credit, currency, and money in circulation," in order to stabilize prices but nothing in the amendment shall authorize any "interference with the natural tendency of prices of specific commodities or groups of commodities to vary among themselves under the influence of demand and supply."

Attention must be called to the possibility that these two injunctions may well be incompatible. To maintain a stable price level, which is a mathematical average, a rise of one group of commodities under the influence of demand and supply, tending to raise the general price level would call for repressive monetary measures to maintain the level. If successful the particular group causing the rise would have to fall or some other group would be compelled to drop in order to compensate for the rise of the first. The relation of the volume of means of payment to the price level and the possibility of using such a supposed relation for the purpose of stabilization will be more fully discussed in the chapter dealing with the quantity theory. The effect of

* (Stabilization Hearings, H. R. 7895, Part 2, pp. 1066-1067. 1927. Washington. U. S. Gov. Printing Office.)

open market operations and the rediscount rate on the volume of money and credit as well as on prices will also be examined more carefully and completely in the chapters devoted to those subjects.

The provisions calling for further information on the entire subject are wholly commendable and it is our belief that if Congress does anything about the subject of stabilization, it should at present be limited to the increase of our knowledge of a subject as to which it were best for all concerned to admit the inadequacy of the existing knowledge as a basis for any far-reaching plans of stabilization.

Although the 69th Congress allowed the Strong Amendment to die this indifference did not impair the conviction of Representative Strong that legislation of this character was necessary. We find him returning to the fray in the present (70th, 1st Session) Congress with H. R. 11806. Hearings were resumed and the discussion of the bill reached the floor of Congress on March 17th. The current bill, a copy of which follows, omits from its preamble broad declarations of justice between debtors and creditors and emphasizes the need for the maintenance of the gold standard. This is a reasonable and attainable object and deserves every encouragement which Congress can lend. The stabilization of business and prices are at present still pots of gold at the end of the rainbow, alluring but, at present, unattainable prizes. It is a mistake to hold forth hopes that they may be won for should the hope fail of realization, as appears altogether probable, the disappointment would be productive of much mischief.

In addition to admonishing the Federal reserve system to use all its powers for the three-fold purpose of maintaining the gold standard, stabilizing business and agriculture and stabilizing the purchasing power of money the bill also requires the publication of the decisions of the Federal reserve board regarding policies related to these three objects. Finally it provides for the further study of the entire subject. While it is doubtful if the latter will improve the present state of disagreement among the doctors the attempt

should nevertheless be encouraged on the chance that it may have this effect.

The full text of the bill follows:

70th CONGRESS, 1ST SESSION

H. R. 11806

IN THE HOUSE OF REPRESENTATIVES

MARCH 6, 1928

Mr. STRONG of Kansas introduced the following bill; which was referred to the Committee on Banking and Currency and ordered to be printed

A BILL

To amend the Act approved December 23, 1913, known as the Federal Reserve Act; to define certain policies toward which the powers of the Federal reserve system shall be directed; to further promote the maintenance of a stable gold standard; to promote the stability of commerce, industry, agriculture, and employment; to assist in realizing a more stable purchasing power of the dollar, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Act approved December 23, 1913, known as the Federal Reserve Act, as amended, be further amended as follows: Add to section 14 the following paragraphs:

“(g) The term ‘Federal reserve system,’ as used in this Act, shall mean the Federal Reserve Board, the Federal reserve banks, and all committees, commissions, agents, and others under their direction, supervision, or control.

“(h) The Federal reserve system shall use all the powers and authority now or hereafter possessed by it to maintain a stable gold standard; to promote the stability of commerce, industry, agriculture, and employment; and a more stable purchasing power of the dollar, so far as such purposes may be accomplished by monetary and credit policy. Relations and transactions with foreign banks shall not be inconsistent with the purposes expressed in this amendment.

“(i) Whenever any decision as to policies is made or whenever any action is taken by the Federal reserve system tending to affect the aforesaid purposes of this amendment, such decision or action and reasons therefor shall be thereafter published by

the governor of the Federal Reserve Board at such time, place, and in such detail as may be deemed by him to be most effective in furthering such purposes, and at least once each year in the Annual Report of the Federal Reserve Board to the Congress."

Sec. 2. After section 28 add the following:

"Sec. 28A. The Federal Reserve Board and the Federal reserve banks are hereby authorized and directed to make and to continue investigations and studies for the guidance of the system's policies, at least to the extent and in the manner described in paragraphs 1, 2, 3, 4, and 5 of this section, and to such further extent as they may deem to be desirable; namely,

"(1) Of the manner and extent to which operations of the Federal reserve system affect (a) the volume of credit and currency, (b) the purchasing power of the dollar, (c) the general level of commodity prices and of other relevant prices, (d) the prices of stocks and bonds, and (e) business activity; through changes of rates of discount, purchases, and sales of securities in the open market, relations and transactions with other banks of issue, or through any other means.

"(2) Of the influence of activities of agencies of the Government of the United States or of domestic or of foreign banks not under the control or influence of the Federal reserve system, or of any other agency or agencies upon the purchasing power of the dollar; and of the influence exerted upon the policies and affairs of the member banks and of their customers by means of direct representations, by publicity, or otherwise; and of the effect of such operations as are conducted by the Federal reserve banks with foreign banks.

"(3) Of the effect upon the purchasing power of the dollar of changes in the supply of and demand for gold, either actual or prospective.

"(4) Of existing means and proposed plans, both national and international, having for their aim the stabilization of agriculture, industry, commerce, employment, and the purchasing power of money.

"(5) Of existing or proposed index numbers of prices or other measures of the purchasing power of money, which are used or might be used, singly or in combination by the Federal reserve system as a guide in executing its policies.

Sec. 28B. The Federal Reserve Board shall report to the Congress from time to time, and at least annually, the methods pursued and the conclusions reached, either final or otherwise, resulting from the aforesaid investigations, and any legislation which will, in its judgment, best promote the purposes of this amendment to the Federal Reserve Act.

"Sec. 28C. Acts and parts of Acts inconsistent with the terms of this Act are hereby repealed."

The testimony of Dr. Miller of the Federal Reserve Board cast much light on the difficulties of regulation. He brought out the fact that the Board, animated by a desire to aid the situation in Europe and to promote foreign trade, lowered the discount rate in July (1927) in order to create easier money conditions. This was supplemented by the purchase of government securities. When the eggs were hatched they developed instead into a vigorous speculative movement in the stock exchange accompanied by a recession in business. The origin of the latter, according to Dr. Miller, is still a mystery.⁴⁹ This frankness while a trifle discouraging is nevertheless refreshing. He seemed to have a profound respect for the magnitude and complexity of the problem which confronts the administrative body of which he is a member and urged that the greatest need of the Federal Reserve board was a freedom from hampering restrictions.⁵⁰ He furthermore displays a distinct distaste for any expansion of the regulative power of the Board and actually suggests that the right to engage actively in open market operations be denied the Board except on the approval of five members. He deprecated any attempt to encourage a more frequent use of the discount rate and open market powers of the Federal Reserve System.⁵¹ In advocating a more passive rôle for the Federal Reserve Board he is facing in a direction diametrically opposed to that of all our stabilization plans. In the view of the author this instinct toward a restraint of power is eminently sensible. The central bank should be the servant rather than the master of a country's business. It is highly dangerous to tamper with a force whose power you do not understand and cannot control.

* *United States Daily*, May 1, 1928.

* *Ibid.*, May 3, 1928.

* *Ibid.*, May 4, 1928.

CHAPTER XII

His Opposition to the Gold Standard—Exaggeration of Its Defects—Relation to the Fisher Plan—Power of the Bank of England to Vary the Price of Gold—Use of Open Market and Discount Powers—Regulation of Internal and External Stability—Regulation of the Note Issue—Statement of Plan by Author.

KEYNES PLAN

JOHN MAYNARD KEYNES presents an interesting case of scholar turned pamphleteer. His work on the Indian Currency ¹ is a judicial and finely critical treatment of an interesting subject. As an economist he won distinction and recognition on both sides of the Atlantic. The war seems to have sharpened his already incisive faculties and we see him launched in a continuous offensive on this, that and the other thing. The Treaty of Versailles was not to his taste and he wasted no time in telling the world about it. His causes often have great merit but he loses poise and restraint and we soon discover emerging from the works of Keynes not the ermine clad occupant of a tribunal whose duty it is to weigh carefully the evidence of plaintiff as well as of defendant, but the advocate sunk in his own cause, blind to the merits of the opposition, biased of view and vitriolic of tongue. From a lukewarm defense of the gold standard in 1922 he turns in vicious assault in 1924. As an assailant he is unsurpassed in the vigor of his attack and the personal venom spent upon the defenders. Verily the gold standard is the epitome of iniquity.

However, we are not interested solely in the literary and psychic evolution of John Maynard Keynes. His trenchant and truculent comments on gold and his proposals anent a managed currency do concern us. Lest he be identified as a born foe of gold we will indulge in a quotation from the

¹ *Indian Currency and Finance*, London; Macmillan & Co., 1913.

Manchester Guardian Commercial Reconstruction Supplement which he edited.

"If gold standards could be reintroduced throughout Europe, we all agree that this would promote, as nothing else can, the revival not only of trade and of production but of International credit and the movement of capital to where it is needed most. One of the greatest elements of uncertainty would be lifted. One of the most vital parts of pre-war organization would be restored. And one of the most subtle temptations to improvident national finance would be removed; for if a national currency had once been stabilized on a gold basis, it would be harder (because so much more openly disgraceful) for a Finance Minister so to act as to destroy this gold basis."²

It would take some seeking to discover a statement which with an equal brevity of compass could present so well the case for gold. It is difficult to identify the author of this with the author of "Monetary Reform" and the "Economic Consequences of Mr. Churchill." Mr. Keynes has travelled far.

MONETARY REFORM

He reviews the evils of inflation and deflation. The former is caused partly by physical factors and also by the expectation that prices are going up and deflation is aggravated not only by an actual fall in prices but by a fear that they will fall. The cause of these phenomena is largely psychic. It is essential that such provision shall be made that there will never be cause for a hope that prices will rise or fear that they will drop, or that if such a movement does occur that it will never go far. Modern society is so constituted that a stable measuring rod of value is necessary, perhaps vital. It behooves us, therefore, to discard the profound distrust we entertain toward deliberate regulation which is necessary to achieve this stability.

His reasoning at times lapses in its accuracy. Witness the following. In discussing the well known alternatives of

² *Manchester Guardian Commercial, Reconstruction Supplement, April 20, 1922.*

currency rehabilitation, deflation and devaluation, the end of both being stabilization on a gold basis, he gives it as his opinion that these two choices do not embrace all the practical means of resuming stability. Gold, he claims, has fallen down on the job.

"If we glance at the course of prices during the last five years, it is obvious that the United States, which has enjoyed a gold standard throughout, has suffered as severely as many other countries, that in the United Kingdom the instability of gold has been a larger factor than the instability of the exchange, that the same is true even of France, and that in Italy it has been nearly as large."³

It must be news to Americans familiar with the history of the past five or six years that this country has borne a crown of thorns in the form of the gold standard. We have not been free of economic or social ills but to attribute them to gold is scarcely warranted by the facts. The connection between the instability of gold, granting that for the sake of argument, and the instability of prices and exchanges of countries not on the gold standard is rather obscure. This is particularly so when one considers that exchange rates between countries, none of which were on the gold standard, displayed very little of the quality of stability which one would be led to expect between countries in the administration of whose currency the element of "management" played such a large part. In our humble opinion there is no more connection between the fantastic fluctuations of prices in post war Germany and the "instability" of gold than there is between the tail of Halley's Comet and the batting eye of Babe Ruth.

In discussing internal stability versus external stability he finds that the pre-war system placed all the emphasis upon the exchanges and that internal price levels had to adjust themselves as best they could. It was a case of the tail wagging the dog and not making a good job of it at that. He agrees with Irving Fisher that it is more important

³ Keynes, J. M., *Monetary Reform*, p. 153.

that the internal price level be stabilized than that the exchanges shall be maintained at any fixed parity. The fatuous adherence to external stability brought grave social and economic disturbances in its train, e.g., the period from 1873 to 1896. External and internal fixity of value were incompatible.

"Indeed, it is doubtful whether the pre-war system for regulating the international flow of gold would have been capable of dealing with such large or sudden divergencies between the price levels of different countries as have occurred lately." ⁴

We grant all this. We also grant that the management of currencies by various Finance Ministers was not conspicuously successful in achieving either internal or external stability. We would also like to call attention to the fact that "such large or sudden divergencies between the price levels of different countries as have occurred lately" have never occurred "between the price levels of different countries" on the gold standard and that such differences are never likely to occur as long as those countries remain on the gold standard.

Under the pre-war system, he avers, the response of internal prices to external influences was slow and insensitive. Under the post war system it is the external prices that have to adjust themselves to internal currency and credit policies. Under the latter the changes both in the price level and the exchanges are apt to be sudden and substantial. The pre-war credit situation is entirely unadapted to such a situation and would be incapable of the necessarily immediate responsiveness, one of the factors which "have made every one nervous of proclaiming a final fixation of the exchange." ⁵ In other words the importers and exporters of England have become so accustomed to violent fluctuations in the price level and the consequent and immediate adjustment of exchanges that they have developed an affection for it. In addition to providing one with a living there has been added to the business of importing and exporting

⁴ Keynes, J. M., *Monetary Reform*, p. 172.

⁵ *Ibid.*, p. 173.

a sporting-element, which contributes to a drab sort of an occupation a color and interest which it never had and which business is loath to lose. Maladjustment, uncertainty, excessive risk, one and all they have become virtues of a monetary system.

On the constructive side we discover somewhat to our surprise that he reserves a much more important place for gold than his previous criticism has led us to expect. He proposes to separate the gold reserve entirely from the note issue and to use it exclusively for correcting fluctuations in the rate of exchange. He argues that its chief use has been to maintain convertibility the purpose of which in turn was to regulate the supply of currency. Since this latter object can now be effectively achieved through the bank rate a gold reserve is an anachronism and an expensive one. There is much in common between this view and that of Cassel.⁶ Like Cassel he displays a great deal of confidence in the efficacy of the discount rate.

He suggests that the Bank of England have the power to vary the price paid for gold. In effect this proposes the same remedy as Irving Fisher advances. It is that the central bank have the power to change the gold equivalent of the pound from time to time as the price level, conditions of employment, trade and other indices require. He would have this price as well as the bank rate announced each week and thereby control both internal and external prices, i.e., achieve both stability of the exchange and the domestic price level. It is not entirely clear how the means proposed will effect this object. He suggests that if gold is flowing out due to rising prices within England, i.e. depreciation in terms of other commodities, the bank rate should be raised. Presumably this will check credit and by a reduction of the means of payment the value of each unit will be increased. There is here obviously a high correlation between one's faith in a strict interpretation of the quantity theory and confidence that the assured effect will follow upon the proposed remedy. There is also necessary the added faith in the

⁶as *Stabilisierung Problem*, G. A. Gloeckner, Leipsic, 1926, pp. 34-35.

ability of the discount rate to control the supply of the means of payment. On the other hand if gold is flowing out of England due to falling prices, i.e., appreciation in terms of other commodities, then the price paid for gold will be raised. That is the equivalent of saying that the gold content of the pound will be decreased. The premise here seems rather unreasonable. Why should gold be flowing out of England if its value is increasing unless it be increasing even more rapidly elsewhere? Keynes is not very clear about this. Furthermore it is necessary to point here to the fact that this would have a very disturbing effect on the foreign trade of England unless all the important commercial nations of the world concluded a uniform agreement on the matter. In the very likely event that this would not occur the English importers and exporters would be faced with precisely the same difficulties as those which confront the American trader under the compensated dollar of Irving Fisher. It is quite apparent that such uncertainties concerning the gold equivalent of the pound would not enhance the prestige of London as the financial center of the world. Keynes does recognize that a control of the price level within rigid limits is not feasible and that future fluctuations must be prevented rather than corrected. Much of the criticism that we have levelled against the Fisher Plan applies to that of Keynes and furthermore it is necessary to add that the former has been worked out with far greater care and attention to detail. The ideas of Keynes on the matter of reform are in the nature of general suggestions. The proposals of Fisher are actually a plan. The text of Keynes' plan follows:

KEYNES PLAN

"I. Accordingly my first requirement in a good constructive scheme can be supplied merely by a development of our existing arrangements on more deliberate and self-conscious lines . . . my scheme would require that they should adopt the stability of sterling prices as their *primary* objective. . . .

"If the Bank of England, the Treasury, and the Big Five were to adopt this policy, to what criteria should they look respectively

in regulating bank-rate, Government borrowing, and trade-advances? The first question is whether the criterion should be a precise, arithmetical formula or whether the criterion should be a precise, arithmetical formula or whether it should be sought in a general judgment of the situation based on all the available data. The pioneer of price-stability as against exchange-stability, Professor Irving Fisher, advocated the former in the shape of his 'compensated dollar,' which was to be automatically adjusted by reference to an index number of prices without any play or judgment or discretion. He may have been influenced, however, by the advantage of propounding a method which could be grafted as easily as possible on to the pre-war system of gold-reserves and gold-ratios. In any case, I doubt the wisdom and the practicability of a system so cut and dried. If we wait until a price movement is actually afoot before applying remedial measures, we may be too late. 'It is not the *past* rise in prices but the *future* rise that has to be counteracted.'⁷ It is characteristic of the impetuosity of the credit cycle that price movements tend to be cumulative, each movement promoting, up to a certain point, a further movement in the same direction. Professor Fisher's method may be adapted to deal with long-period trends in the value of gold but not with the, often more injurious, short-period oscillations of the credit cycle. Nevertheless, whilst it would not be advisable to postpone action until it was called for by an actual movement of prices, it would promote confidence and furnish an objective standard of value, if, an official index number having been compiled of such a character as to register the price of a standard composite commodity, the authorities were to adopt this composite commodity as their standard of value in the sense that they would employ all their resources to prevent a movement of its price by more than a certain percentage in either direction away from the normal, just as before the war they employed all their resources to prevent a movement in the price of gold by more than a certain percentage. The precise composition of the standard composite commodity could be modified from time to time in accordance with changes in the relative economic importance of its various components.

"As regards the criteria, other than the actual trend of prices, which should determine the action of the controlling authority, it is beyond the scope of this volume to deal adequately with the diagnosis and analysis of the credit cycle. The more deeply that our researches penetrate into this subject, the more accurately shall we understand the right time and method for controlling credit-expansion by bank-rate or otherwise. But in the meantime

⁷ Hawtrey, *Monetary Reconstruction*, p. 105.

we have a considerable and growing body of general experience upon which those in authority can base their judgments. Actual price-movements must of course provide the most important datum; but the state of employment, the volume of production, the effective demand for credit as felt by the banks, the rate of interest on investments of various types, the volume of new issues, the flow of cash into circulation, the statistics of foreign trade and the level of the exchanges must all be taken into account. The main point is that the *objective* of the authorities, pursued with such means as are at their command, should be the stability of prices.

"II. How can we best combine this primary object with a maximum stability of the exchanges? Can we get the best of both worlds—stability of prices over long periods and stability of exchanges over short periods? It is the great advantage of the gold standard that it overcomes the excessive sensitiveness of the exchanges to temporary influences, which we analyzed in Chapter III. Our object must be to secure this advantage, if we can, without committing ourselves to follow big movements in the value of gold itself.

"I believe that we can go a long way in this direction if the Bank of England will take over the duty of regulating the price of gold, just as it already regulates the rate of discount. 'Regulate,' but not 'peg.' The Bank of England should have a buying and a selling price for gold, just as it did before the war, and this price might remain unchanged for considerable periods, just as the bank-rate does. But it would not be fixed or 'pegged' once and for all, any more than the bank-rate is fixed. The Bank's rate for gold would be announced every Thursday morning at the same time as its rate for discounting bills, with a difference between its buying and selling rates corresponding to the pre-war margin between £3: 17: 10½ per oz. and £3: 17: 9 per oz.; except that, in order to obviate too frequent changes in the rate, the difference might be wider than 1½d. per oz.—say ½ to 1 per cent. A willingness on the part of the Bank both to buy and to sell gold at rates fixed for the time being would keep the dollar-sterling exchange steady within corresponding limits, so that the exchange rate would not move with every breath of wind but only when the Bank had come to a considerate judgment that a change was required for the sake of the stability of sterling prices.

"If the bank rate and the gold rate in conjunction were leading to an excessive influx or an excessive efflux of gold, the Bank of England would have to decide whether the flow was due to an internal or to an external movement away from stability. To fix

our ideas, let us suppose that gold is flowing outwards. If this seemed to be due to a tendency of sterling to depreciate in terms of commodities, the correct remedy would be to raise the bank rate. If, on the other hand, it was due to a tendency of gold to appreciate in terms of commodities, the correct remedy would be to raise the gold rate (i.e., the buying price for gold). If, however, the flow could be explained by seasonal, or other passing influences, then it should be allowed to continue (assuming, of course, that the Bank's gold reserves were equal to any probable calls on them) unchecked, to be redressed later on by the corresponding reaction.

"There remains the question of the regulation of the Note Issue. My proposal here may appear shocking until the reader realizes that, apart from its disregarding the conventions, it does not differ in substance from the existing state of affairs. The object of fixing the amount of gold to be held against a note issue is to set up a danger signal which cannot be easily disregarded, when a curtailment of credit and purchasing power is urgently required to maintain the legal-tender money at its lawful parity. But this system, whilst far better than no system at all, is primitive in its ideas and is, in fact, a survival of an earlier evolutionary stage in the development of credit and currency. For it has two great disadvantages. In so far as we fix a minimum gold reserve against the note issue, the effect is to immobilize this quantity of gold and thus to reduce the amount actually available for use as a store of value to meet temporary or sudden deficits in the country's international balance of payments. And in so far as we regard an approach towards the prescribed minimum or a departure upwards from it as a barometer warning us to curtail credit or encouraging us to expand it, we are using a criterion which most people would now agree in considering second-rate for the purpose, because it cannot give the necessary warning *soon enough*. If gold movements are actually taking place, this means that the disequilibrium has proceeded a very long way; and whilst this criterion may pull us up in time to preserve convertibility on the one hand or to prevent an excessive flood of gold on the other, it will not do so in time to avoid an injurious oscillation of prices. This method belongs indeed to a period when the preservation of convertibility was all that any one thought about (all indeed that there was to think about so long as we were confined to an unregulated gold standard), and before the idea of utilizing bank-rate as a means of keeping prices and employment steady had become practical politics.

"Let us return to the regulation of note issue. If we agree that gold is not to be employed in the circulation, and that it is better

to employ some other criterion than the ratio of gold reserves to note issue in deciding to raise or to lower the bank rate, it follows that the only employment for gold (nevertheless important) is as a store of value to be held as a war-chest against emergencies and as a means of rapidly correcting the influence of a temporarily adverse balance of international payments and thus maintaining a day-to-day stability of the sterling-dollar exchange. It is desirable, therefore, that the whole of the reserves should be under the control of the authority responsible for this, which under the above proposals, is the Bank of England. The volume of the paper money, on the other hand, would be consequential, as it is at present, on the state of trade and employment, bank-rate policy and Treasury Bill policy. The governors of the system would be bank-rate and Treasury Bill policy, the objects of government would be stability of trade, prices, and employment, and the volume of paper money would be a consequence of the first (just—I repeat—as it is at present) and an instrument of the second, the precise arithmetical level of which could not and need not be predicted. Nor would the amount of gold, which it would be prudent to hold as a reserve against international emergencies and temporary indebtedness, bear any logical or calculable relation to the volume of paper money;—for the two have no close or necessary connection with one another. Therefore I make the proposal—which may seem, but should not be, shocking—of separating entirely the gold reserve from the note issue. Once this principle is adopted, the regulations are matters of detail. The gold reserves of the country should be concentrated in the hands of the Bank of England, to be used for the purpose of avoiding short-period fluctuations in the exchange.”⁸

⁸ Keynes, J. M., *Monetary Reform*. New York. Harcourt, Brace & Company. 1924. Pp. 201-213.

CHAPTER XIII

The Regulation of the Demand for Gold Through International Agreement—International Gold Exchange Standard—No Improvement over Gold Standard—Faith in the Power of the Discount Rate—Success of Plan Contingent upon English and American Adoption—Statement of Plan by Author.

HAWTREY¹ proposes the stabilization of the currency units by establishing gold equivalents whose aberrations would be eliminated by controlling the demand for gold.

"If all the principal countries of the world settle in the near future what the value of their currency units in gold is to be, we want so to regulate the demand for gold that the values of these currency units in commodities does not vary substantially."²

This is to be accomplished through the medium of the gold exchange standard. The central banks of issue of the leading mercantile nations shall be induced to extend each other credits or paper money of domestic validity in exchange for similar credit or paper money legally current in foreign countries with whom engagements of this reciprocal character have been made. The terms of exchange are to be just favorable enough to eliminate the transportation of gold. The purchasing power parities could not suffer any prolonged discrepancies for this would disturb the balances of gold. In order to prevent dangerous variations in the price levels, he advises the use of index numbers as rough guides but considers it inadvisable to depend upon them entirely since this device is still removed some distance from perfection. At the same time, he would refuse to delegate to an administrative body the necessary discretion which the absence of a rigid formula requires. Legislative control is, in his opinion, the best solution. This may be accomplished by the establishment of a reserve to serve as a limiting fac-

¹ *Monetary Reconstruction*, London, 1923.

² *Ibid.*, p. 59.

tor in the issue of currency or by the designation of a definite quantity of fiduciary notes which is never likely to exceed the minimum necessary for the needs of the country. All in excess of this is to be backed by 100% of gold and a further margin provided as a reserve for seasonal fluctuations. He considers the second method the better since it effectually prevents inflation which the first does not. By international agreement all the participating states are to adopt the same plan, i.e., an uncovered note issue and a part covered by gold so that the two will meet the average needs plus a reserve for fluctuations. The supply of currency in all the countries must be such that the exchange rates are at or near their gold parities. Such parities once achieved are to be maintained through the mechanism of the gold exchange standard. Central banks of issue will sell exchange when it has reached the gold export point for domestic legal tender currency only and such currency shall be retired from circulation. This will have the same effect as the export of gold in a simple gold régime. In the country on which the exchange has been sold, additional currency may be issued up to the amount of the currency which has been retired in the country or countries where such bills had their origin.³

An Anglo-American agreement might be sufficiently strong to swing the rest of the states into alignment. In such an event he would propose the following plan:

1. The aggregate uncovered note issue of America and England should remain constant.
2. Remittances from one to the other should take place in accordance with the principles of the gold exchange standard.
3. There shall be control of credit internally with a view to maintaining, through index numbers, at a fixed point, the value of gold in terms of Commodities.

He fails to make clear how the first and third parts of this plan may be reconciled.

Hawtrey has a great deal of faith in the efficacy of the discount rate as an instrument of monetary control. He

³ *Monetary Reconstruction*, London, 1923, pp. 61-62.

believes that the post-war boom in the United States was due to easy money and the consequent depression, the result of the deliberate policy of the Federal Reserve Board and the necessary consequence of its raise in the discount rate. The decision to appreciate the dollar caused depression throughout the world since the pride of other nations compelled them to attempt a similar appreciation of their currencies with equally disastrous results. This drastic deflation might have been partially prevented by measures taken in time but went too far, since the stock of excess gold in the vaults of the Federal Reserve Banks is so great that inflation will again be necessary. Part of the painful experience of inflation and deflation will, in the first case, be retraced and, in the second, prove to have been a futile sacrifice.⁴

If this gloomy prediction were correct, it would scarcely serve as a recommendation for any further management of our currency.

In the statement of his plan, which follows, certain facts should be noted. He offers a solution which is simply a substitute for the gold standard. It operates exactly as the gold standard is supposed to operate and at its best would be no better. Since most of the world has already returned to the gold standard, our interest in his plan is purely academic. It shows the influence of the Peel Act in that it favors the currency principle in the regulation of the note issue. Another point of interest is the opinion that the currency is a function of credit and that the latter is the independent variable. This reverses the order of the strict quantity theorist. It thus fits into a stabilization plan more readily than the more common theory that bank credit is the function of money. It is now the expansion of credit which causes prices to rise and only then brings on an increased demand for currency. Since the rise in prices precedes the increase of money, the price index affords warning in time to take preventive measures. The plan as stated by Hawtrey follows:

⁴ *Ibid.*, pp. 102-103.

"Whatever system is adopted must be the subject of international agreement. If the pitfalls are to be avoided, if the world-value of gold is to be stabilised, there will be an arbitrary or conventional factor in the currency problem, which no individual state will be able to evaluate without reference to its neighbours.

"The basis of this international agreement will be the establishment by each of the participating States of a currency law calculated to allow so much uncovered paper money as, with the portion covered by gold, will just provide for its needs, with a suitable margin or reserve left over. This margin or reserve (like the banking reserve of the Bank of England) is necessary to allow of the inevitable casual and seasonal variations. The supply of currency of each country must be, as nearly as may be, such that all the foreign exchanges are at or near their new gold parities. Once this state of equilibrium has been attained it must be preserved by the gold exchange standard.

"The gold exchange standard may be applied in more than one way. The usual practice is to offer to buy or sell credits abroad in exchange for credits at home, a reserve of foreign bills or other foreign assets being maintained, to be drawn upon for the purpose. These foreign assets are sometimes counted as the equivalent of a gold reserve for the purposes of the currency law. Clearly this must not be allowed. And if the gold exchange standard is to reproduce as nearly as possible the gold movements that would occur under a simple gold system, what is wanted is not an exchange of credits but an exchange of legal tender money—that is to say, anyone with legal tender money in one country should be able to surrender it in exchange for an equivalent amount of legal tender money in any other country, the amount so surrendered being withdrawn from circulation. In fact, this would mean that any country, party to the agreement, could add to the paper money based in accordance with its currency law on the gold reserve, further issues based on reserves of foreign paper money placed in its hands abroad. These additional issues being equal to the reserves held against them, the aggregate circulation of paper money in the international system would remain unchanged, and would still be limited in accordance with the aggregate gold reserves.

"Any country which indulged in inflation, or allowed its currency unit to depreciate, would find more and more of its paper money locked up in the exchange reserves and withdrawn from circulation. This would operate like the export of gold.

"If legal tender money were the sole means of payment the system would work automatically. The mere scarcity of currency would itself restrict purchases and bring about a reduction of

prices. But the principal means of payment in modern business is credit. Credit is only transformed into legal tender money for the payment of wages and for the smaller transactions. A scarcity of legal tender money does not affect prices until it has reacted on credit. As the possessor of a bank credit is free to draw as much of it as he pleases in cash, the first impact of the scarcity is felt entirely by the banks and not at all by the public. This is a signal to the banks to contract credits, and its effectiveness depends on their responding to the signal.

"To rely exclusively on a regulation of the legal tender currency is therefore fallacious. Far from solving the problem of controlling the currency, it merely passes on to the bankers the burden of solving it.

"And that is the reason for proposing, besides the limitation of uncovered paper money and the gold exchange standard, the use of an index number of prices in the administrative control of currency. If we rely on the limitation of paper money, and the bankers do not succeed in keeping control of credit, the inevitable result will be that, when the bank reserves in some or all countries threaten to melt away to nothing, the limitation of paper money will be suspended.

"Credit has an inherent tendency to expand, and the problem of controlling it reduces itself in practice to curbing this tendency in time to prevent undue depreciation of the monetary unit. Essentially depreciation means a rise in the average level of prices, and therefore the index number of prices affords the most direct measure of the movements to be counteracted. And what is more important still, the rise of prices *precedes* the drain of legal tender money into circulation. It will be the function of the principal banks of issue of the associated States to watch the index of world prices, and to put the brake on by raising the rate of interest as soon as a material rise is recorded. But this must not be done without discrimination. On the one hand, a rise of prices may be due not to credit expansion but to a scarcity of one or two important commodities. On the other, an incipient expansion of credit may take effect not in a rise of prices but in an increased volume of purchases. The banking authorities must take into account not only the statistical data, such as the index numbers, but also all that they can learn of the state of business from their relations with traders.

"Regulating credit, in fact, is an exceedingly delicate operation. How, then, it may be asked, can we hope to arrive at a system of international control? Most of the countries co-operating will be subjected for many years to come to prodigious financial burdens. The power of inflating credit or over-issuing paper money

is intimately connected with Government finance, and in the last resort may afford the only alternative to an act of bankruptcy. A Government will not definitely divest itself of this power, nor, if it did, could its undertaking be in all circumstances observed. Are we to expect the development of a delicately balanced international mechanism from a crowd of distracted financiers, each pre-occupied with the desperate embarrassments of his country and ready to clutch at any expedient to gain a few months' respite from his troubles? Or are we first going to assume that all the real difficulties of the situation have been surmounted, and then tell the world what sort of currency system will be best for it?

"The answer is that in practice the effectiveness of an international system would not absolutely depend on its universality. The very moment British currency is re-established on a gold basis, and sterling and dollars are at par, a beginning can be made. The United Kingdom and the United States, together with a number of minor powers, which have acquired large gold reserves and considerable financial strength during the war, could start the system. An Anglo-American combination would command so large a proportion of the world's stock of gold that it would be almost sufficient by itself. The mere existence of so important a currency system on a stable basis would lead other countries to regulate their own monetary units by it, even though they never bound themselves by any agreement. When a collapse of credit precipitates an intense demand for a metallic currency, that is because there is no other medium of payment that people will trust or recognise. If there is a foreign credit system, which can be made the basis of a new currency, it will be easier to utilise this through an exchange system than to import gold.

"Again, leaving aside the danger of an actual currency collapse, the financially weaker countries have less power of attracting gold. If the financially strong are in the combination, then, however great the gold hunger of the remainder may be, its effect on the world-value of gold will be relatively moderate. Nor are the financially weaker countries likely to let loose their stocks of gold to flood the market. Indeed, except in the case of France, the gold holdings of these countries are hardly great enough to flood the market, and France is always intensely reluctant to part with gold.

"In reality, therefore, we can arrive at a fairly satisfactory practical solution of our currency problems as soon as we can reach an arrangement between England and America, with a view to maintaining their aggregate uncovered paper issues as nearly as possible at a fixed amount, to providing for remittances be-

tween them on a gold exchange basis, and to controlling credit with a view to keeping the gold value of commodities, as measured by an index number, approximately constant. The third of these conditions is the most novel, but, if it could be carried into effect, would be the most useful. It might not be consistent with the first, but where they differ it would, at any rate in theory, be the more correct guide to follow, and the paper currency law could be adjusted from time to time as might be necessary.

"The purpose of such a system would be not merely to restore the gold standard, but to make it a more trustworthy standard than it has been in the past. The demand for gold as currency would, in fact, be so regulated as to make the value of a gold unit itself in commodities as nearly as possible constant." *

* Hawtrey, R. G., *Monetary Reconstruction*. New York. Longmans, Green & Co. 1923, pp. 61-65.

CHAPTER XIV

Mechanical Application of Open Market and Discount Powers of Federal Reserve Banks—The Principle of Progression in Rise of Discount Rate and Extent of Open Market Purchases and Sales—Statement of Plan by Author.

CARL SNYDER here suggests a rather mechanical application of the open market and rediscount powers of the Federal Reserve banks. A given rise in the price level would call for a given rise in the discount rate and a similarly set sale of government securities. The principle of progression would be applied so that radical changes in the price level might be checked. In order to prevent the disturbing effects of imports and exports of gold on bank reserves and therefore on the price level only government legal tender would be eligible for bank reserves and this amount would not be affected by exports and imports of gold since any diminution in the reserves due to redemption for gold export could be offset by the purchase of government securities and vice versa. As we have already attempted to show mechanical formulæ for the control of the price level have prohibitive defects and are certainly not viewed with favor by the Federal reserve board or Federal reserve officials. The plan is based upon a faith in the quantity theory and a further faith in the power of the discount rate and open market operations to regulate the supply of bank credit. These matters will be taken up more fully in the chapters devoted specifically to them. A statement of the Snyder Plan follows:

"In brief, what is here proposed is:

"(1) To make all note issues, government or federal reserve, fully redeemable in gold and full legal tender, and the sole legal tender and the sole money of bank reserves. Gold itself would then cease to be, directly, legal tender, though practically it would be, of course, just the same as now. And this change would

in no way affect contracts now existing, to pay in gold, or the making of future contracts.

"(2) To put all the gold now in the Treasury and the federal reserve banks in a common redemption fund, used exclusively for the redemption of the currency. This would, in effect, make all the currency issues now outstanding (less than 4 billions) practically gold certificates. And this provision, of course, would mean the repeal of the requirements in the Federal Reserve act, of gold reserves against federal reserve notes and deposits.

"(3) To control or restrict the total issue of this gold standard currency by means of an index number of prices, checked by other index numbers of production, employment and trade. The index number of prices might well be the present Bureau of Labor index of wholesale prices, on the theory that the check applied must be applied early, and that the movement of wholesale prices is much more rapid and always precedes in time any movement of the general price level. This index should be checked by indices of production and employment, on the theory that at times prices might be rising rapidly, with employment below normal; but this would happen rarely.

"(4) Control of the note issue to be through the medium of the federal reserve banks, which should be required by law, on a change in the price level of, let us say, 3 per cent (or whatever figure might be decided upon) to raise or lower the rate of rediscount by 1 per cent, or in the same way to raise or to lower their holdings of securities and acceptances by, let us say, some conventional figure like 100 million dollars, as might be agreed upon; or both. The changes in the bank rate and security holdings might be at a mildly progressive rate as, for example, a change of 1 per cent in the rate for the first 3 per cent change in the price index, another 1 per cent for the next 2 points change in the price index, etc. But in practice this would scarcely be needful, or only for emergencies. For example, if, starting from the beginning of 1919, when prices began to rise at the rate of 2 and 3 per cent a month, this arrangement would have brought the rate of rediscount up to 10 per cent within six months, and this would certainly have been sufficient to have checked inflation by, let us say, October of 1919. In fact, with this automatic check it seems probable that inflation could not have gone on for more than three or four months.

"(5) It seems clear that this control must be automatic and free from the possibility of intervention by any kind of influence, political, financial, or otherwise. It seems evident, from our experience, that this is the one possible means of obtaining such control.

"(6) Finally, all exports or imports of gold or currency required by law to be registered and certified, and when a given amount of currency has been, for example, exported or presented to the Treasury or banks for redemption or for gold exports, the federal reserve banks to increase their holdings of securities by a corresponding amount (say in lots of 50 or 100 millions); and vice versa.

"The idea, in sum, is to keep the amount of currency and credit in balance with the price level, and maintain the latter at as nearly a constant figure as is practically possible. It is not generally known or realized that in the years just before the War, and extending even past the first year of the War, this country at least had reached a quite extraordinary degree of economic stability, beyond that perhaps of any similar period in a century and more. In the seven years from the end of 1908 to late in 1915, the annual averages, even of commodities at wholesale, varied by only four points, on the Bureau of Labor index (from 97 to 101).

"Investigations carried out by the writer in the last three years seem to indicate distinctly that this high degree of economic stability could again be attained, rather quickly, and by the simplest of means, as has here been briefly sketched."¹

¹ Snyder, Carl. *The Stabilization of Gold: A Plan*. American Economic Review, June, 1923, pp. 283-285.

CHAPTER XV

Both Plans Based on International Co-operation—Possibility of Such Co-operation—Professor Taussig's View—Genoa Plan Would Control the Demand for Gold and Economize Its Use Through Extension of Gold Exchange Standard—Statement of the Genoa Plan—Statement of the Lehfeltdt Plan.

THE two following plans, that of the Genoa Conference and that of Professor Lehfeltdt, are both based upon international cooperation. The Genoa plan looks to a control of the demand for gold and the extension of the gold exchange standard, in order to economize in the use of gold. The Lehfeltdt plan proposes to control the supply of gold through having the nations of the world unite in acquiring control of all the gold mines in the world. This would require less than a billion dollars and the plan he argues, would be entirely feasible. He feels that short time fluctuations in the business cycle can be controlled by central bank policies through the discount rate and open market operations but that long time swings due to changes in the supply of gold are beyond the power of the central banks and require some kind of international cooperation. On the subject of international cooperation, a passage by Professor Taussig written some years ago in discussing the Fisher plan occurs to us as the ideal comment.

"An international agreement for its adoption seems to me in the highest degree unlikely. Let it be recalled how repeated were the endeavors, under stress greater than that felt in recent years, to bring about an agreement for international bimetalism. A fall in general prices and in money incomes is a phenomenon much more unwelcome than a rise. The earlier fall in prices, moreover, was bitterly felt not only by the debtor classes, but by all the protectionists. The movement for international bimetalism had powerful support in political circles as well as among economists. Yet it never had a ghost of a chance. So great is the rivalry between nations, so intent is each upon its own advantage, so jealous are they of each other, so strong above all is the spirit of

selfishness and mercantilism in their economic policies, that it seems to me hopeless to expect them to come to an understanding on a matter of this sort.”¹

A full statement of these two plans follows:

GENOA CONFERENCE, APRIL 20, 1922²

Resolutions on Currency of the Financial Commission:

“Resolution 1. The essential requisite for the economic reconstruction of Europe is the achievement by each country of stability in the value of its currency.

“Resolution 2. Banks, and especially banks of issue, should be free from political pressure, and should be conducted solely on lines of prudent finance. In countries where there is no central bank of issue one should be established.

“Resolution 3. Measures of currency reform will be facilitated if the practice of continuous cooperation among central banks of issue or banks regulating credit policy in the several countries can be developed. Such cooperation of central banks, not necessarily confined to Europe, would provide opportunities of coordinating their policy without hampering the freedom of several banks. It is suggested that an early meeting of representatives of central banks should be held with a view to considering how best to give effect to this recommendation.

“Resolution 4. It is desirable that all European currencies should be based upon a common standard.

“Resolution 5. Gold is the only common standard which all European countries could at present agree to adopt.

“Resolution 6. It is in the general interest that European Governments should declare now that the establishment of a gold standard is their ultimate object, and should agree on the program by way of which they intend to achieve it.

“Resolution 7. So long as there is a deficiency in the annual budget of the State which is met by the creation of fiduciary money or bank credits, no currency reform is possible and no approach to the establishment of the gold standard can be made. The most important reform of all must therefore be the balancing of the annual expenditure of the State without the creation of fresh credits unrepresented by new assets. The balancing of the budget requires adequate taxation but if government expenditure

¹ F. W. Taussig. *The Plan for a Compensated Dollar*. The Quarterly Journal of Economics, May 1913, pp. 407-408.

² Federal Reserve Bulletin, June 1922, pp. 678-679.

is so high as to drive taxation to a point beyond what can be paid out of the income of the country, the taxation itself may still lead to inflation. The reduction of government expenditure is the true remedy. The balancing of the budget will go far to remedy an adverse balance of external payment by reducing internal consumption. But it is recognized that in the cases of some countries the adverse balance is such as to render the attainment of equilibrium in the budget difficult without the assistance in addition of an external loan. Without such a loan that comparative stability in the currency upon which the balancing of the budget by the means indicated above largely depends may be unattainable.

"Resolution 8. The next step will be to determine and fix the gold value of the monetary unit. This step can only be taken in each country when the economic circumstances permit; for the country will then have to decide the question whether to adopt the old gold parity or a new parity approximating to the exchange value of the monetary unit at the time.

"Resolution 9. These steps might by themselves suffice to establish a gold standard, but its successful maintenance would be materially promoted, not only by the proposed collaboration of central banks, but by an international convention to be adopted at a suitable time. The purpose of the convention would be to centralize and coordinate the demand for gold, and so to avoid those wide fluctuations in the purchasing power of gold which might otherwise result from the simultaneous and competitive efforts of a number of countries to secure metallic reserves. The convention should embody some means of economizing the use of gold by maintaining reserves in the form of foreign balances, such, for example, as the gold-exchange standard or an international clearing system.

"Resolution 10. It is not essential that the membership of the international convention contemplated in the preceding resolution should be universal even in Europe; but the wider it is the greater will be the prospect of success.

"Nevertheless, if the participating countries and the United States are to use the same monetary standard, no scheme for stabilizing the purchasing power of the monetary unit can be fully effective without coordination of policy between Europe and the United States, whose cooperation therefore, should be invited.

"Resolution 11. It is desirable that the following proposals, to form the basis of the international convention contemplated in Resolution 9, be submitted for the consideration of the meeting of central banks suggested in Resolution 3:

"1. The Governments of the participating countries declare

that the restoration of a gold standard is their ultimate object, and they agree to carry out, as rapidly as may be in their power, the following program:

"(a) In order to gain effective control of its own currency each Government must meet its annual expenditure without resorting to the creation of fiduciary money or bank credits for the purpose.

"(b) The next step will be, as soon as the economic circumstances permit, to determine and fix the gold value of the monetary unit. This will not necessarily be at the former gold power.

"(c) The gold value so fixed must then be made effective in a free exchange market.

"(d) The maintenance of the currency at its gold value must be assured by the provision of an adequate reserve of approved assets, not necessarily gold.

"2. When progress permits, certain of the participating countries will establish a free market in gold and thus become gold centers.

"3. A participating country, in addition to any gold reserve held at home, may maintain in any other participating country reserves of approved assets in the form of bank balances, bills, short-term securities, or other suitable liquid resources.

"4. The ordinary practice of a participating country will be to buy and sell exchange on other participating countries within a prescribed fraction of parity of exchange for its own currency on demand.

"5. The convention will thus be based on a gold exchange standard. The condition of continuing membership will be the maintenance of the national currency unit at the prescribed value. Failure in this respect will entail suspension of the right to hold the reserve balances of other participating countries.

"6. Each country will be responsible for the necessary legislative and other measures required to maintain the international value of its currency at par, and will be left entirely free to devise and apply the means, whether through regulation of credit by central banks or otherwise.

"7. Credit will be regulated not only with a view of maintaining the currencies at par with another, but also with a view of preventing undue fluctuations in the purchasing power of gold. It is not contemplated, however, that the discretion of the central banks should be fettered by any definite rules framed for this purpose, but that their collaboration will have been assured in matters outside the province of the participating countries.

"Resolution 12. With a view to the development of the practice of continuous cooperation among central banks and banks regulating credit policy in the several countries, as recommended in

Resolution 3, this conference recommends that the Bank of England be requested to call a meeting of such banks as soon as possible to consider the proposals adopted by the conference and to make recommendations to their respective Governments for the adoption of an international monetary convention."

PROFESSOR LEHFELDT'S PLAN *

"Now, the first point I want to make is that the problem of stabilization is divided into two parts: There are the short-period fluctuations and the long-period trend of prices; and the periods of fluctuation are associated with what is well known as the trade cycle, and the changes which we know as the trade cycle are, no doubt, partly due to the monetary changes and partly due to other things—the changes in price level and the other phenomena mixed up. And, without going into the reasons for a trade cycle, it is clear that it can be controlled to some extent by banking policy.

"I think everybody is agreed that the policy set by banks in controlling the rate of discount and in open-market operations has a considerable effect in controlling and mitigating the ordinary changes of the trade cycle—changes which occur in three or four or perhaps seven or eight years. Now, the banks have got that idea well in their minds, and it is not that side of the question with which I want to deal. But besides the short-period fluctuations due to the trade cycle, fluctuations in the price level which usually amount to perhaps 5 or 10 per cent—or more than that during the fluctuations after the end of the war, but in the ordinary case 5 or 10 per cent—now, besides that there are changes due to the abundance or scarcity of gold.

"So long as the world uses gold as the basis of its money, the value of the money must ultimately depend upon the cost of producing gold; and, consequently, you get changes in the value of money occurring, changes which are slow acting but cumulative and in the long run come to be a greater extent than those which are produced by the trade cycle.

"You are familiar with the fact that from about 1873 to 1896 there was a more or less steady decline in prices followed by a steady rise in prices which lasted up to the opening of the war. Now, those changes were due to the fact that in the earlier period the amount of gold produced from the mines was not sufficient to supply the increase in demand; whilst during the second of those two periods, owing to the fertility of the mines, the output of gold was too great and, consequently, forced up the level of

* *Stabilisation Hearings*, H. R. 7895, op. cit., pp. 1046-1049.

prices. Now, these two effects show how it works in practice—a short period and a long period.

"The short-period effects can be dealt with by banking policy, but the banking policy will break down in the long run if the other phenomenon is not attended to. If, for instance, gold becomes more and more abundant relative to the demand for it, then you will be faced with a situation with which the United States has been faced recently of having more gold than it wants. If that superabundance of gold goes on not merely for three or four years but for a longer period indefinitely, I do not think it would be possible to maintain a standard price level by banking policy; the policy would break down. . . . Therefore, the point I want to make is this: That the discount policy alone is incapable of controlling the situation in the long run unless there is also some control over either the amount or the use of gold. So long as you have your currency based on gold, that is inevitable, because you must, in the long run, take into account the supply of the money metal. Now, it seems to me, therefore, that the policy of control of the discount rate, while perfectly right in itself, needs supplementing in the long run by a policy of control over the gold metal itself.

"There are, as far as I know, only two suggestions before the world about that: One is the one with which you are familiar, Prof. Irving Fisher's, to alter the amount of gold corresponding to the dollar, or whatever the unit is, so as to maintain the value of the unit constant, but not to maintain the size of the gold coin. Now, that scheme seems to me to be a sound one from the economic point of view; but I am very doubtful whether the commercial or political world would take to it. It seems to me rather too upsetting to the ideas of the ordinary business man. The world is very glad to get back to the gold standard, and I do not think it is going to sacrifice that in favor of a scheme which, theoretically, is very ingenious, but which, I think, the ordinary man would not grasp.

"Now, the other scheme which I want to put before you, which I have written about from time to time, is controlling the output of gold—controlling it in the same sense in which the output of diamonds is controlled, for instance, by a syndicate. It is perfectly practical, as every business man knows, to control the output of any commodity, especially a mining commodity which is not produced very widely. Of course, I do not suggest a private syndicate to do this. It is not for private profit; it is for the benefit of the world that I suggest it, and it would therefore have to be an international syndicate—a syndicate of the governments. I do not think there would be any difficulty, any serious

difficulty, from the point of view of carrying it out, if the governments could agree, first of all, as regards the amount of capital needed. It is very much less than people usually think. The gold-mining industry is not a very large one. One-half of the gold supply of the world comes from the mines of Witwatersrand, Johannesburg, and the surroundings, and the market valuation of all the mines in Witwatersrand is only about three hundred and fifty or four hundred million dollars. So that if you double that and allow a margin, it means that less than a billion dollars would serve as capital for the whole gold-mining industry of the world. I suggest, therefore, that it would be possible for the nations to form some sort of commission whose business it would be to buy up the gold-mining industry—

"The Chairman. 'You are speaking now of the governments themselves, or of the financial systems under the governments?'

"Professor Lehfelddt. 'I suggest an international commission should be appointed by the governments, on which each of the governments of importance, at any rate, should be represented; and to this commission should be delegated the business of controlling the output of gold. In order to do so, they would begin by buying up the gold mines and the ground which is known to possess gold deposits, and they should then regulate the production of gold in accordance with what they consider to be the needs of the world for money, so as to avoid either excessive production; or, if the production tends to fall off, they shall stimulate it—the object being to maintain a constant value for the unit of gold, so that the dollar, remaining the same number of grains of gold, should retain approximately the same value.' "

CHAPTER XVI

Unorthodox Premises of Writer—Esoteric Nomenclature—Determination of Value an Act of the State—External Value of Unit Depends upon Trade Balances—By Proper Administration Both Internal and External Values Can be Controlled by the State—Gold a Convenient but not Necessary Money Material—Its General Use an Historical Accident—Positive Proposals—Summary of Theory.

PERHAPS the most difficult of all the theories of a managed currency to understand is the one expounded by Knapp. The first difficulty is the unorthodox nature of his premises. To Georg Friederick Knapp the state is omnipotent and omniscient. His exaltation of state power approaches the sublime. Possibly one should expect such celestial adoration of the state from a scholar bred in the Prussia of Bismarck and steeped in the absolutism of Frederick the Great. As the Prime Minister of Canute he would doubtless have conveyed with absolute confidence the message of that monarch to the waves. "Money is a creature of law. A theory of money must therefore deal with legal history."¹ "The soul of currency is not in the material of the pieces, but in the legal ordinances which regulate their use."² "A means of payment is a movable thing which has the legal property of being the bearer of the units of value."³ Throughout the book there appears implicitly and explicitly the belief that the value and explanation of money must be discovered in the power of the state.

The second difficulty of the student of Knapp is the medium which he has taken for the conveyance of his ideas. He has adopted an esoteric nomenclature of money derived from Latin and Greek which constitutes a distinct impediment to the reader. His erudition is of the ponderous vari-

¹ *The State Theory of Money*, Georg Friedrich Knapp, abridged edition translated by H. M. Lucas and J. Bonar, Macmillan & Co. London, 1924, p. 1.

² *Ibid.*, p. 2.

³ *Ibid.*, p. 7.

ety and it is devoutly hoped that his terminology will not find general acceptance. Monetary science deals with money and no less with human beings. Effective reform and wider education will not be aided by the use of language that only the initiated can fathom. Without the support of the intelligent public researches will go for naught.

He repudiates the suggestion that it is the function of the state to protect so far as possible the stability of the unit of exchange in order that the value of contracts be not impaired, even in terms of some standard good. It is not the function of the state and the state has never conceived it to be its function to maintain the absolute amount of a debt according to the material used in payment at the time the debt was incurred. It maintains the relative amounts of debts and changes the means of payment from time to time. This tends to change the absolute amounts of the debts and apparently the state is entirely within its rights in doing so. Debts therefore are purely nominal since the units in which they are expressed are subject to alteration by the state, i.e. the units of value are nominal.

The unit of value is a legal, historical concept. Its nominality is established by the existence of genuine inconvertible paper money. This nominal unit can of course be stamped upon some material capable of giving substantial real satisfaction but this is not necessary to establish its character and validity as a unit of value and a means of payment. It simply offers the possibility of an alternative use.

It is entirely possible to make judgments of the value of commodities in terms of this nominal unit of value. Comparison of one commodity in terms of another is unnecessary. In other words the unit of value has no existence in fact. It is a sort of mental image sustained and defined by the state. In deciding our purchases we do not consult the amount of money we have in our accounts or wallets but invoke this intangible, juristically born measuring staff.

The choice of a means of payment, the denomination of the means of payment according to new units of value and

the definition of the new unit are all free acts of the state and flow from its authority.⁴ This is certainly the philosophy on which some of our colonial legislatures acted.

The choice of the standard hardly matters since its influence on the internal trade of a country is negligible. It is lost in the face of positive, price determining forces such as "new routes or canals, customs tariffs, transport rates, the building of new ships, etc." Each person is seeking his own profit. Some prices rise and others fall. A rise "is due to the increased power of the seller, the fall to his diminishing power;" Prices are expressed not in quantities of metals but in terms of valuta money. Therefore "the relation of this money to the metals has no significance."⁵ This change does no harm to the individual. A drop in the value of the valuta means that he has to pay out a larger number. But he also receives a large number when he is paid. The loss in paying is compensated by a gain in receiving.

He concludes that the internal use of gold is not defensible in theory although it is an easy standard for the politician to defend to the man in the street.

He sometimes uses the words value and validity interchangeably and this is not surprising in view of his sublimation of legal sanction.

He makes a distinction between the use of the valuta internally and in foreign exchange. Internally its value depends upon authority, externally it depends upon supply and demand. Supply and demand depend upon the state of the foreign trade balances. If these are favorable the unit will rise in value; if unfavorable they will fall. Of domestic purchasing power he speaks not. The material content of the unit is without influence. Take the case of the Indian rupee and the Mexican peso from the early seventies to the end of the century. They would have fallen even though the production of silver had not increased. They sank "owing to pantopolic reasons" which is Knapp's way of saying that the balance of trade was against Mexico and India during this period.⁶ This phenomenon explained

⁴ *Ibid.*, p. 24.

⁵ *Ibid.*, p. 218.

⁶ *Ibid.*, p. 245.

at once the low quotation of the rupee in pence and the low price of silver in London. The evil was aggravated by the abandonment of silver by other nations, e.g. France and Germany, with whom India might have had favorable balances and through whom they could consequently purchase sterling at much more favorable rates.⁷ What prevented India from using her hypothetically favorable trade balances with France and Germany for purchasing sterling at better rates just as she might have done according to the premises if these two countries had retained silver he does not explain. The fall of the rupee could affect the price of silver in London but apparently the price of silver in London could never affect the value of the rupee as long as the balances continued favorable to India. On the other hand if these balances were unfavorable a scarcity of silver could in no way alter the dictum of the trade balance.

Through the right kind of administration, exchange parity between two states can be established by government action. There is nothing natural or automatic about this parity. It is the result of the deliberate choice by legal authority and is realized through "exodromic" intervention "without any effect on the domestic valuta policy of the States."⁸ In the latter case the state steps in to fix the price of the standard metal. The state pits itself against the forces of the market. If the market supply drops off the state increases it. If the demand is weak the state is ready to buy at a fixed price. In the foreign exchanges the state determines the prices which must be paid for the foreign units in terms of the domestic valuta. The objects are different. The methods are the same.⁹

He scouts the idea that the exchanges regulate themselves automatically and that deviations from parity establish forces that tend to eliminate them. We have this,

"Here we will not discuss the quantity theory, if interpreted in the sense that the money in one country is diminished and increased in the other, and that this re-establishes the parity. Such an idea is vulgar ignorance."¹⁰

⁷ *Ibid.*, p. 248.

⁸ *Ibid.*, p. 245.

⁹ *Ibid.*, p. 255.

¹⁰ *Ibid.*, p. 257.

If as the result of continued unfavorable balances the stocks of money in a country run low measures are taken which are anything but automatic. They are deliberate interventions, e.g. the raising of the discount rate. The ostensible purpose of this is to protect the bank reserves. The actual purpose is to restore parity. Such action is not automatic. The intervention and the deed are deliberate. Again where the state accumulates a supply of foreign bills it does so for the purpose of stabilizing the exchanges. Sometimes this is done at considerable cost to the state where it is compelled to buy at once price and sell at a lower price. Where a state acquires foreign balances through loans we have the same deliberate motive. Where do we have our vaunted automatism? If an unfavorable balance persists it is only a question of time before such intervention breaks down and a rate emerges which is the result of the balances, i.e. pan-topologically.

He concludes that automatic regulation of the exchanges is possible only when both countries have the same metallic standard and is effective only for short and insignificant fluctuations. Beyond this, extensive intervention is necessary. Such intervention requires sacrifices either on the part of borrowers who are compelled to pay higher interest rates, on the part of the central institution which attempts stability by selling at par or on the part of the government which provides exchange at par. In the last analysis the rate hangs on the state of the balances and an abiding remedy is possible only through a strengthening of the commercial position of the nation and "not by merely altering its currency system."¹¹ The latter is a question of commercial strength just as truly as a stable rate of exchange.

The universality of the gold standard is due entirely to the fact that it facilitates the stabilization of the exchanges. It is through no intrinsic virtues that it does so. The silver standard could serve just as well if the commercially dominant nations of the world adopted it. Every change of a standard except such as are due to necessity have been the

¹¹ *Ibid.*, p. 268.

result of a desire to stabilize the exchanges. It might well be asked how the gold standard ever got started. This, the author explains, is a historical accident. England was the dominant commercial power. Other nations were compelled to make settlements with her or through her. If she had been on the silver standard there would have been the same universal extension of the silver standard.¹² It was not the gold standard therefore that spread but the English monetary system.

Gold is used internally and for "exodromic" control not because it is necessary but simply because it simplifies inter-valutary stabilization. It can be dispensed with for internal circulation and can also be discarded for foreign trade without affecting the stability of the exchange rate.¹³ He is very vague as to his *modus operandi* and the interpreter must indulge in liberties with the text in order to present the plan. His difficulties are aggravated by the use of vehicles of expression which must be translated into ordinary and comprehensible language.

1. The various devices in use for the control of the exchanges should be continued. These would presumably include manipulation of the discount rate, the establishment of substantial balances abroad, and the pegging of the rate at state expense.
2. The creation of an autogenic (inconvertible and/or fiduciary) currency controlled exclusively by the state.
3. The formulation of rules which will govern the amount of money to be issued by the state.

SUMMARY OF KNAPP'S THEORY

It is impossible to accuse Knapp of running in the beaten path. One is reminded in turn that people who seek new paths sometimes get lost. He does not display the same personal animus toward the gold standard as the others. He merely argues that it is a sort of monetary excrescence and while it is a convenient standard or material for a standard it is nevertheless unessential and can be readily

¹² *Ibid.*, p. 278.

¹³ *Ibid.*, p. 296.

discarded. He does not discuss minute price control through the use of index numbers. He denies that the gold standard is automatic in its operation. Its introduction was an accident and its continuation dependent upon the deliberate will of the leading commercial nations of the world. If they decide to retain it the other nations will be compelled to return to it. He distinguishes between the internal and external value of money. Within a country its value is dependent upon authority, beyond the borders its value is dependent upon the state of the trade balances. Not only is it possible to manage currencies but they have always been managed. The unit of value is defined legally and its validity rests upon the authority of the state. While this authority extends only to their boundaries states can make treaties and through them establish "stable intervalutary exchange." For example England and Germany may establish through convention that one pound sterling shall be equal to twenty marks for inter-valutary purposes. In England one may always obtain one pound sterling for twenty marks and vice versa and the same be true for Germany.¹⁴ He is courting a phantasy.

¹⁴ *Ibid.*, p. 294.

CHAPTER XVII

A Modern Version of the Tabular Standard—A Proposal to Displace Gold as Our Standard Material—Difficulties of a Multiple Standard with Multiple Redemption—Statement of the Plan.

THE plan of Professor Lewis is simply the latest version of the tabular standard. It provides for the substitution of four commodities in place of gold. These four are wheat, cotton, iron and silver and it is the confident belief of Professor Lewis that these four commodities would provide a more stable currency than gold alone. At a later point in the book we shall examine the indictment against gold as an unstable standard and compare it with a hypothetical tabular standard consisting of wheat, cotton and pig iron. We shall discover that a currency unit based upon these three commodities would have sustained greater fluctuations in purchasing power over a period of 68 years than did gold itself. Where gold showed an average annual fluctuation of value in terms of all other goods of 4.2 per cent the combined commodity index showed 5.43 per cent in spite of the fact that we omitted the price of cotton during the Civil War period which would have made the record still more unfavorable to the tabular standard. While our group of commodities does not include silver there is no reason to believe that this fickle precious metal would substantially alter the verdict.

Since the monetary use of gold does not destroy the metal (excepting only through abrasion) the amount which may be added during any given year to the existing supply constitutes but a small percentage of the latter and therefore cannot have any radical effect on its value. This is not true of wheat, cotton or pig iron. The supply of gold is cumulative and gives to its value a stability which is absent with

commodities whose total supply passes through a complete productive cycle each year.

We have already intimated that the tabular standard is not a novelty. Jevons devotes some space to it in his *Money and the Mechanism of Exchange*¹ and credits the idea to Joseph Lowe.² who in turn attributes it to earlier writers. Palgrave³ asserts that both the concept and the phrase "tabular standard" are traceable to Sir George Evelyn. The following table indicates that Sir George had a clear conception of a consumption standard.

Year	Wheat	Twelve Misc. Articles, viz. an ox, cow, poultry etc.	Butcher Meat	Day Labor	All
1550.....	100	100	100	100	100
1675.....	240	239	166	118	210
1740.....	197	492	266	250	287
1760.....	203	492	400	275	342
1795.....	426	752	511	436	531

In at least one respect this is superior to the standard suggested by Professor Lewis in that it includes the cost of labor. Joseph Lowe, already referred to, was the first to emphasize the practical value of such a standard as a "plan for lessening the injury from fluctuation, and giving a uniform value to money incomes."

Professor Willard C. Fisher in a careful study of the tabular standard⁴ shows that the idea was in the minds of the early legislators of the State of Massachusetts long before it appeared from the pens of English scholars and was, moreover, actually incorporated in legislation.⁵ The plan of Professor Lewis is therefore, a new form of an old idea.

In addition to the fact that it is not likely to solve the difficulties of an unstable standard, the plan has further

¹ P. 329.

² *Present State of England*, 1823, par. 2, chap. X.

³ *Dictionary of Political Economy*, pp. 509-511.

⁴ *Tabular Standard in Massachusetts*, Quarterly Journal of Economics, May, 1913, pp. 417-451.

⁵ Sept. 12, 1747, and Jan. 13, 1780, *ibid.*, p. 425 and 435.

defects. To maintain the value of the unit equivalent to the purchasing power of the four constituent commodities it is necessary for the government to provide convertibility. The state would be required to maintain supplies of these commodities for redemption or make arrangements with private enterprise. Either alternative suggests complications. The right to redeem would be meaningless unless the individual who presented his notes had the extensive merchandising facilities which would enable him to realize the value of the pig iron, wheat, cotton and silver which he now had on hand. A little imagination will suggest the susceptibility of such a plan to caricature. Finally, granted that all these difficulties have been obviated there still remains the fact that this standard would be a poor standard for international trade. One of the great advantages of the gold standard is the fact that the cost of shipping gold is small and the extent of variation of the exchange rate from par is limited to a narrow range determined by that cost. With bulky articles this cost would be far greater and the range of deviation from the par of exchange correspondingly uncertain.

Two of these four commodities are subject to marked seasonal changes which would not only substantially affect the purchasing power of the unit but would also invite speculation.

A full statement of Professor Lewis' Plan follows.

"The Warrant System with a Convertible Composite Money. Merely for the purpose of our illustration, let us select four commodities to be used in our composite standard of currency. First, let us choose the most important of food-stuffs, wheat, with such specifications as to quality as are already familiar in the Wheat Exchange. Second, let us choose the most important textile material, cotton. Third, let us choose the most important of metals, iron. Finally, as our fourth commodity we may, partly as a concession to sentiment, partly because of its already large financial employment, choose the precious metal, silver.

"Likewise for the purpose of illustration let us call our currency unit one tal, and a note for 1000 tals may, if we like, be called a *kilotal*, or, for short, a *kil*. This kil will have the value

of *a* pounds of wheat, *b* pounds of cotton, *c* pounds of iron, and *d* pounds of silver, these quantities being fixed at the outset, once for all, and subject to no later alteration.

"Anyone possessing a note for one kil may present this at a Government office and receive therefor four warrants, the first of which entitles him to receive *a* pounds of wheat; the second, *b* pounds of cotton; the third, *c* pounds of iron, and the fourth, *d* pounds of silver.

"Now while the value of a wheat warrant, a cotton warrant, an iron warrant and a silver warrant would together be always exactly one kil, the market price of the individual warrants would vary. Thus, for example, a wheat warrant might be worth 200 tals now and 220 tals a year from now. This, however, would be a matter of no particular concern to the Government. It would always upon demand issue the four warrants for every kil turned in for that purpose, and conversely would give one kil in currency for every set of four warrants brought in.

"It remains to provide for the conversion of the individual warrants into the corresponding commodities, and *vice versa*. A bank established by the Government, or under the supervision of the Government, would presumably act as the medium for these exchanges. The bank itself need not handle the commodities for which warrants are issued, but might give in exchange for a warrant an order upon some reputable firm, for which it would pay the current rate quoted on the Exchange. Thus a person presenting ten wheat warrants to the bank would receive an order for $10 \times a$ pounds of wheat upon some member of the local Wheat Exchange; and a person wishing to sell $10 \times a$ pounds of wheat would receive therefor ten warrants purchased from the bank at the current rate.

"If the Government desires to avoid speculation in warrants, it could make these warrants valid for a short time only, but I do not myself see the necessity for such a provision. The bank might act in these exchanges as banks do in very similar transactions involving foreign moneys, taking whatever small profits or losses might result from the fluctuations in value of individual warrants; or it might act merely as the financial agent of the Government. In either case payment to the bank would be necessary for its services in conducting the exchanges. This payment might be made out of the general funds of the Government, or a small commission might be charged for each transaction, corresponding to the brassage of some older systems of currency. All of these, however, are details which need not be entered upon at present.

"In countries which might possibly be cut off from the supply

of one or more of these basic commodities, it might be desirable to establish Government warehouses for storing one or more of the basic commodities, but this is no essential part of the plan, and indeed it is usually found best not to tax the Government with duties which can equally well be performed by the existing machinery of private enterprise. The fact that the Government possesses no reserves will not affect the value of its money as long as the people are confident that the Government will fulfill its obligations to convert its money into the basic commodities.

"It must be admitted that there is nothing even in this plan to prevent a Government in desperate straits from repudiating its obligation to redeem the paper money in commodities and thus cause a depreciation in the value of money. Yet such a step would be a definite confession of bankruptcy. Sometimes when Governments have refused to redeem paper money in gold they have had the valid excuse that there was no available gold. With the composite currency such an excuse would not often be given.

"Finally, we must consider how such a monetary system could be substituted for existing systems. Some authors have felt that it would be an injustice to fix prices permanently at their present high level. I suspect, however, that most of the ills produced by a change in the price level are suffered within the first year after the change occurs, and that a later restoration of the original price level would not so much relieve old injustices as create new ones. Whatever theory we adopt in this regard, the desired result could readily be effected by the new monetary system.

"Thus, to take a specific example, let us assume that England desired to maintain forever the existing price level by the method here outlined, basing its currency upon the composite standard of wheat, cotton, iron and silver, but without any nominal change in its monetary unit. It would then be only necessary to provide for the conversion of a thousand pounds sterling into *a* pounds of wheat, *b* pounds of cotton, etc., the quantities *a*, *b*, *c* and *d* being so chosen that the whole set of commodities at the present market price would have the value of £1000. The change to the new system would be entirely imperceptible to the man on the street, who would only observe with satisfaction that the cost of living had become stationary.

"If, however, it were desired to fix the price level as it was before the war, or, as a third and compromise alternative, to fix the level so as to restore the normal exchange between the pound and the dollar, it would be possible to determine the quantities *a*, *b*, *c* and *d* so as to produce this result. Either of these decisions, however, would mean an appreciation of money, and this should not occur abruptly. But if some future date were set for the

establishment of the new system, a gradual appreciation would occur through the ordinary agencies of discount and speculation, so that once more the transition would occur on the specified date without being noticed by the average citizens.

"If two or more nations desired to adopt such a convertible composite currency it would not be necessary to change the units of money in these countries, but it would be desirable for each to adopt the same basic commodities and the same ratios of *a* to *b*, to *c*, to *d*. In such event the fluctuations in the rate of exchange between the two countries would not be much greater than it was before the war under the gold standard. In the long run the rate of exchange would depend upon the cost of transportation of the basic commodities from one country to another."⁶

⁶ Lewis, Prof. G. N. *A Plan for Stabilizing Prices*. The Economic Journal, March, 1925, pp. 43-46.

CHAPTER XVIII

THE FORD PLAN

A Theoretical Curiosity and a Monetary Anachronism—Statement of the Plan.

THE inclusion of this plan requires both explanation and apology. We do not mean to indicate by the title that the plan was formulated by Henry Ford or written by him. It appears in the *Dearborn Independent* which makes a specialty of chronicling "the neglected truth." There is however such a similarity between all the articles on such subjects as the Jews, interest payments and money as to indicate very definite editorial inspiration. The periodical may be offering the neglected truth but it appears to be very careful to offer only a certain portion of it.

The plan itself does not deserve serious consideration and is offered here partly as a curiosity and partly because of the prominence of the owner of the *Dearborn Independent*.

A statement of the plan follows:

"The lesson which this story teaches is obvious, but I will nevertheless summarize it as follows:

"1. The Metallic Basis: The theory that a gold or silver reserve is a necessity is only a myth held up before the masses to be revered as a religion the mandates of which are impossible of performance, because there is not sufficient gold in existence to discharge the debts made payable in that metal. Gold and silver, except as subsidiary coin, have long ago ceased to circulate, because of their inconvenience and quantitative inadequacy. These metals are used as 'reserves' in obedience to an unnecessary law, passed to compel reverence for the fetish of the gold standard. It is also used to settle international trade balances, which could as well be adjusted by international currency, just as domestic bank balances are sometimes settled by clearing house certificates. If gold were demonetized, the cost of its transportation

forth and back over the oceans would be saved, and the metal would come into its own as inexpensive fillings for defective teeth, personal adornments, ornamentations pleasing to the eye, and for numerous other purposes requiring non-corrosive material or permanence of appearance.

"2. Over-Issue: If the issue of paper money is confined to legitimate, that is, constructive purposes, there can be no danger of an over-issue, because it is paid out for material, labor, or other services, and as the volume issued is based upon the estimated cost of work to be performed, it logically follows that, as the performance of the work depends on the number of hands available, so the issue of currency is limited accordingly; but is, nevertheless, always adequate. . . .

"3. Depreciation: For each issue of money, a corresponding tax is levied, which is paid periodically; and, when the last installment is returned, the issue may be said to have been withdrawn from circulation. It has served the purposes for which it was issued and is returned to its source, having completed the circuit of exchange; while other issues for other purposes continue to circulate until their specific objects have been attained and their usefulness ended. The tax-levy thus becomes the controller of the currency and inflation is prevented; unless—money is issued for destructive purposes, as war, which is avoidable; and speculation, in which governments would have no incentive to indulge.

"4. Adequacy and Elasticity: There would always be a sufficiency of the circulating medium because each project would be financed by its specific issue, which by its free circulation unhampered by private privilege of control, would serve in all individual transactions arising as subsidiaries to the project for which the issue was made, including the personal needs of those engaged in its execution. The elasticity is automatic, as the system provides expansion when new work is projected and contraction when it is completed.

"It is obvious what an impetus this system would give to individual enterprise in science, art, invention and other fields of human endeavor. There would be no national debts, and the money with which to pay taxes would always be in the hands of the people.

"Money is only popular bookkeeping; it is accounting reduced to its simplest form."¹

¹The Dearborn Independent, *The Guernsey Market House, a Story of Finance*, Herjulf Vikingsson, February 18, 1922.

CHAPTER XIX

Similarity of Premises and Proposals—Inadequacy of Existing Standard—Necessity for Deliberate Management Through Open Market Powers—Control of Discount Rate—Control of Currency and Credit Supply.

No attempt has been made to provide an exhaustive analysis of the theories upon which these plans rest. The failure to do so has imparted to our criticism an air of superficiality and it is not the intention of the author to allow the matter to rest there. To have made a complete study of each plan as presented would have called for tedious repetition of the same points. It would have made this work unnecessarily voluminous and its cost prohibitive.

All of these plans rest upon the premise that our present currency systems are unsatisfactory. The first point therefore is an attack upon the existing standard. Some of the plans imply that a cure can be effected by simply substituting some other material or group of materials for gold. However the authors of most of the plans we have considered are not satisfied to trust our monetary destinies to the supply and demand of other commodities any more than they are willing to trust them to gold. They demand a human manipulation of the media of exchange to the end that the value of the units may be stabilized. Almost all of the plans lead eventually to a control of the supply of currency and the genealogy of their logic is approximately as follows:

1. The existing *automatic* standard is and has been unsatisfactory.
2. Positive human direction is necessary to be attained by:
 - a. Regulation of open market operations which will make the discount rate effective
 - b. Regulation of the discount rate which will control the supply of currency and bank credit

- c. The control of currency and bank credit will make possible the control of the price level since the latter is dependent upon the former. This relationship has sufficient precision so that we can bring about any desired effect on prices if we have the necessary control of money and credit.

In the following chapters we shall examine this putative chain of cause and effect in the order in which we have here stated them.

PART III

THE THEORETICAL AND PRACTICAL POSSIBILITY OF STABILIZATION

CHAPTER XX

Theatrical Indictment of Gold by Professor Fisher—An Egg or Carpet Standard Preferable—Ring the Changes on the Evils of Rising and Falling Prices—Most Striking Illustrations Taken from the Experiences of Countries Not on the Gold Standard—Inflation as a Cause of War—Ford's Attack on Gold—Keynes and the Gold Standard—Past Stability an Accident—Future Price Levels a Hazard—Exaggerating the Cost of Maintaining the Gold Standard—Evidence Used for This Assault Not Fair—Average Annual Fluctuation Over a Period of 145 Years Only 4.5 Per Cent—Barring War Periods This is Reduced to 2 Per Cent—Impossible to Compare Standard of Value with Physical Standards—Rate of Changes and Not Total Range Important in Appraising Stability—Fisher and the Egg Standard—Comparison of the Purchasing Power of Gold with That of Wheat—Cotton—Pig Iron—Combined Commodity Standard—A "Managed" Gold Standard.

THESE men have presented to us formulæ whose design and intent are beneficent. They have breathed a profound dissatisfaction with our present monetary systems. Their ardor may be misplaced, their facts, interpretations and conclusions in error. Their sincerity cannot be impugned. These men have staked their reputations upon this cause. They are not charlatans seeking the public light for the gratification of personal vanity. In this we must yield them our respect.

As we attempt judgment it is well to select first the props upon which their argument is founded. They are trying to move their fellows to action on a vital matter. Having an acute appreciation of human nature and knowing that man is a creature of habits it is first necessary to blast him out of his conservatism. The initial step therefore, must be to persuade him that the present situation is intolerable or foolish or extravagant or dangerous or unjust or all of these. The Socialist first destroys the institution of private property and the instrument of destruction is welded from discontent. So it is with these advocates. They must first destroy the gold standard and undermine the esteem in

which men hold it. To do this they must prove that it has failed, not moderately, but miserably. The first point of assault therefore is gold. Its vices and defects constitute the fundamental premise upon which a "managed currency" rests.

THE ATTACK ON THE GOLD STANDARD

In the assault upon the gold standard Fisher leads the way. He draws a devastating indictment against it, taking many of his most striking illustrations from war periods during which most countries of the world were off the gold standard. He solemnly rings all the changes on the evils of rising and falling prices with the skill of an accomplished publicist, "the shrinking dollar," "the dollar which looks like thirty cents," and of course there is the poor working girl whose homely virtues of thrift and self-denial are portrayed, who has placed a portion of her hard earned savings in a bank at 3% interest to discover when she withdraws them twenty years later that they buy no more with all the accumulated interest than they did when they were first deposited. Social injustice and the mockery of fixed incomes move this scholar to rhetoric. The villain gold is dramatized, his shocking vices disclosed to a shuddering audience, the evil effects that attend his rôle are painted in somber colors that the applause may be greater when the hero, the "stabilized dollar," armed with an index number, ascends the stage, properly chastizes the unregenerate knave and virtue is finally enthroned and evil confounded when the hero converts the villain into a useful citizen.

It is in his assault upon gold that Fisher arrests the attention of the reader. It is accused of being a pretentious interloper in the company of civilized standards, e.g., the yard, the pound, the quart, etc. Each of the latter are guarded and defined with scientific exactitude but the one most vital, most freighted with ominous or felicitous significance, standard with which the economic well-being of the race is most integrally associated is treated with a negligence that borders the criminal. The dollar serves as a standard of

value and as a means of payment, immediate and deferred. It fails miserably in the task. It is only a definite amount of gold and gold has been an exceedingly unreliable standard of exchangeability. If one should select a commodity to serve as a basis for the currency it would, at least from the point of view of stability as a standard of value, have been better to select some other commodity such as eggs or carpets.¹ He alleges that eggs have been at least as stable and carpets more stable than gold.

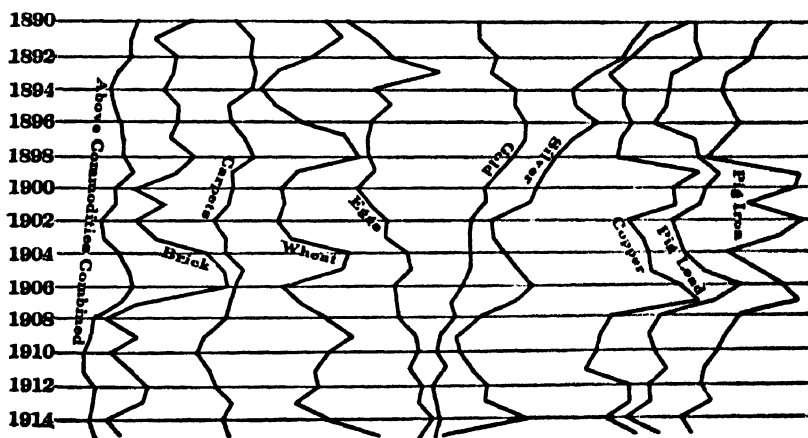


CHART 4 *

To throw additional light on the defectiveness of gold as a standard of value he submits a chart whereon are traced the values of certain staple commodities in terms of commodities in general. This chart is an unusual bit of evidence and is reproduced here for the benefit of the reader. He observes with a show of judicial restraint that silver has been less stable than gold. The concession is superfluous. It is difficult to understand how a man with a normal vision can draw from this evidence a conclusion so patently contradicted by the evidence itself.

On the stand before the Committee on Banking and Cur-

¹ *The Stabilised Dollar*, p. 41. Also Hearings on "Stabilization of Purchasing Power of Money," p. 22.

* Fisher, *Stabilizing the Dollar*, p. 42.

rency² he reviews the price experiences of England and the U. S. from the point to which dependable indices have been extended in the two countries. He omits to distinguish between those periods of rapid price fluctuations during which one or the other of the two countries has been off the gold standard and those periods of relative stability where the currency is based upon a solid foundation of gold. Very evidently the force of his indictment of the existing standard would be materially impaired if he called attention to this cardinal difference in conditions.

Coming down to recent European experience he stresses inflation as the almost exclusive cause of price changes.

"What I want to impress upon you is that that is universally the truth, that the changes in the purchasing power of money are universally or almost universally due, for the most part, to changes in money and not to changes in goods."³

In justifying the latter part of this statement he argues from mathematical probability in the following fashion. A scarcity of goods could effect the price level just as well as an abundance of money and in the same fashion but this is improbable since a general scarcity of goods would require a coincident decrease in hundreds of commodities whereas an increase in money would call for an expansion of but one article. He presents to us in a single statement the key to his arbitrary sublimation of single factors in the explanation of the most complicated social phenomena. "In logic it is a universal rule that you accept a simple and single explanation where you can get it rather than complicated and multiple explanations."⁴ It constitutes Fisher's damnation of eclecticism in philosophy. It is an admission amply verified by his attitude on some of the most abstruse social problems of the day. Thus price changes are due almost solely to changes in the quantity of money. The business cycle is due to failure of the interest rate to properly adjust

²Hearings before the Committee on Banking and Currency of the House of Representatives, 67th Congress, 4th Session on H. R. 11788 to Stabilize the Purchasing Power of Money, Dec. 18, 19, 20, and 21, 1922.

³*Ibid.*, p. 9.

⁴*Idem.*

itself to price changes. The increase in prosperity during the last seven years has been due entirely to prohibition. It is a comfortable attitude to wed. What a burden of mental effort is eliminated if one can bind his intellectual allegiance to a single cause instead of dissipating it judiciously over a great variety some of them incommensurable imponderables? What a great aid to pedagogy it must be to be able to say to the student without hesitation, without qualification and with absolute finality that periodic depressions in business are due to a failure of the interest rate to properly adjust itself. The remedy flows forth with equal simplicity. Henceforth we need only adapt the interest rate to the particular stage of the cycle in which we happen to discover ourselves and man will be relieved forever of this sword of Damocles which dangles with sinister imminence above him.

Fisher's testimony is the triumph of advocacy over scholarship. Perhaps the end justifies the means, an attitude often bred of over-enthusiasm for a cause. In describing the evils of a changing price level the poor working girl and the widow are prominent actors in the drama. But Fisher goes further than that. It develops that the depreciation of gold prior to the war was one of its material causes. The syllogism runs somewhat as follows. When prices are rising the wages of the worker fail to keep pace resulting in a diminution of real wages. This breeds discontent and socialism, and socialism is the haunting spectre of monarchy. The Kaiser discovering that socialism was making dangerous progress in Germany and might soon jeopardize the throne staged a war to distract the people and take their minds away from fanciful and dangerous economic panaceas. An unstable monetary unit has therefore been instrumental in inflicting upon the race this titantic cataclysm.⁵

On the other hand the depreciation of the mark during the war so incensed and discouraged the German soldiery that they finally decided that a Kaiser who would permit

⁵"So I believe unstable money was a factor in precipitating the war by generating this discontent in Germany and strengthening the socialistic party, of which the Kaiser was so afraid." *Stabilization of Purchasing Power of Money, Hearings on H. R. 11788*, p. 20.

such an evil was a poor man to work for and this was an important factor in inducing them to lay down their arms on that memorable 11th of November.⁶ This suggests an important departure in military tactics for future wars. In addition to blockades, poison gas, aerial bombing expeditions and submarine attacks the future commander will include in his repertoire of offensive measures the insinuation of large quantities of currency back of the enemy lines thus causing depreciation and undermining the morale of the enemy. One can even visualize future disarmament conferences seriously considering the prohibition of hostile inflation as being unsportsmanlike and contrary to the genius of gentlemanly warfare.

Subjecting these fantastic speculations of Fisher to sober facts rather than ridicule it is germane to inquire what the price level and the extent of depreciation was in allied countries at the time of the armistice. The index of the Reichsamt for Germany shows a price index of 234 for November, 1918, Riccardo Bachi shows an index of 437 for Italy, the Statist one of 229 for England and the Statistique Generale an index of 358 for France. The allied soldiers must have possessed much greater immunity to the insidious influence of a depreciating currency.

It will be recalled that Fisher is testifying on Dec. 18, 1922. The country was just recovering from its post war depression and prices during 1922 had moved from 138 in January to 156 at the end of November (Index number of wholesale prices of Bureau of Labor Statistics). This led him to dismal vaticination on the probability of inflation in the near future and the "penalties in social injustice, in discontent, in class warfare, in wrong legislation"⁷ which that would entail.

Professor Rogers (James H.) like Fisher draws extensively on the paper ridden countries of Europe for illustrations of the unhappy consequences of an unstable currency. By implication this indictment is associated with the existing standard in America under which we have had no

⁶ *Ibid.*, p. 21.

⁷ *Ibid.*, p. 22.

experiences of comparable extremity. The bill proposes a manipulated gold standard for an automatic gold standard. Presentation of harrowing social experiences under the latter is pertinent and should be confined to the latter. The contention is advanced that the inadequacies of the existing system necessitate a change. The argument therefore should be restricted to the alleged defects of the system which it is proposed to displace and should not embrace the social ills which have followed the depreciating mark or crown striking tho they may be and valuable in provoking action in favor of the bill. As a matter of logic the procedure is dishonest.⁸

No history of the abuse of gold would be complete without the strictures of Henry Ford. A most cursory examination of his periodical "The Ford International Weekly. The Dearborn Independent, Chronicler of the Neglected Truth" will persuade one that his characterization of history as "bunk" has a certain grain of truth in it. Mixed in with such topics as "An Address to 'Gentiles' On the Jewish Problem" ⁹ and "Remarkable Confession of a Yiddish Writer and His Strange Reaction" ¹⁰ we find a most extraordinary series of articles on gold. Their general tenor is that mankind has been and still is the victim of a gigantic conspiracy the object of which is nothing short of enslavement and that the instrument used by the conspirators, presumably Jews, to force humanity under the yoke is gold. The wild statements circulated through this personal oracle would ordinarily not deserve serious attention were it not for the prominence of the prophet. Some of the material has found its way into Congress and has been thus preserved by solicitous representatives to a grateful posterity. For our purposes we need only repeat the headlines. They are eloquent.

"Cheap Gold!"

"The Money Mystery." ¹¹

"Does Gold Make Dollar or the Dollar Gold?"

⁸ P. 52. Goldsborough Bill Hearings.

⁹ *The Dearborn Independent*, Jan. 14, 1922.

¹⁰ *Ibid.*, Jan. 7, 1922.

¹¹ *Ibid.*, Jan. 21, 1922.

"Money the Only Subject That is Omitted from Our Public Education."

"No Rich—No Poor—No Gold!" ¹²

"'Fiat Money' That's Better than Gold." ¹³

"'Imaginary Money': Fakes of Gold Basis." ¹⁴

"The 'Gold Fiction.' " ¹⁵

"Gold Has Dropped Out of Circulation." ¹⁶

"Fast on a Gold Reef: The Fate of the U. S." ¹⁷

"Banks Use Print to Crush 'Heresies'—Country Towns are Flooded by Bank Association Propaganda." ¹⁸

"The Captors of Government—From Bryan's 16-to-1 to the Federal Reserve." ¹⁹

"The Golden Dam to the Stream of Prosperity." ²⁰

Articles of similar inspiration directed against interest flowed in a steady stream from Detroit during 1922. They had a wide circulation and undoubtedly were taken seriously in many quarters.

KEYNES ²¹ AND THE GOLD STANDARD

In the first place its stability during the past century has been an accident due to the fact that the gradual exploitation of the world's gold resources has kept pace, roughly, with the increasing demand for it. No one can tell what the future will hold. There are no further visible sources. Gold may therefore become increasingly scarce. Some chemical wizard may transmute one of the baser metals to gold or it may become profitable to extract it from the sea. In that case it will become cheaper. It is a mistake to tie the welfare of the race to an unpredictable eventuality. To this one might add that it is also an error to condemn gold out of hand on the basis of a remote possibility for the realization of which there appears at present very little evidence. When such an obstacle as he contemplates appears it will

¹² Feb. 18, 1922.

¹³ March 11, 1922.

¹⁴ April 15, 1922.

¹⁵ Feb. 25, 1922.

¹⁶ March 18, 1922.

¹⁷ April 22, 1922.

¹⁸ March 4, 1922.

¹⁹ March 18, 1922.

²⁰ August 19, 1922.

²¹ John Maynard Keynes, *Monetary Reform*. Harcourt, Brace & Company, New York, 1924.

be time to consider it. We all know that eventually we will return to the dust whence we came. That does not give us present justification for committing suicide.

He alleges in the second place that the monetary demands for gold before the war were fairly stable and the gold standard was permitted to administer itself. To-day gold has become a managed currency. The United States acquired a lot of gold during the war and instead of playing according to the rules and permitting the increased supplies to operate automatically, to increase prices, decrease exports, increase imports, develop an unfavorable balance, settle with gold exports, experience deflation, until equilibrium in prices and the supply of gold was reestablished, the Federal Reserve Board, "has been driven, —, to the costly policy of burying in the vaults of Washington what the miners of the Rand have laboriously brought to the surface." ²² Gold is at present pegged at an artificial price and its future value will probably depend upon the deliberate policy of three or four of the powerful central banks of the world—that is, if all the chief nations return to the gold standard.²³ If these countries do not revert to the gold standard then the future value of the metal will depend entirely upon the policy of the Federal Reserve Board of the United States.

"Confidence in the future stability of the value of gold depends therefore on the United States being foolish enough to go on accepting gold which it does not want, and wise enough, having accepted it, to maintain it at a fixed value. This double event might be realized through collaboration of a public understanding nothing with a Federal Reserve Board understanding everything." ²⁴

The prospects of instability under a managed standard are therefore no worse than those which obtain at the present under the gold standard since the latter is also managed and as a means of payment is more difficult to control and regulate than a real managed currency.²⁵

²² *Ibid.*, p. 181.

²³ *Ibid.*, p. 183.

Idem.

²⁵ This accords with Cassel's views, see *Das Stabilisierungs Problem*, p. 47.

As for the distrust of Ministers of Finance which clothes the managed currency proposals with garments of sinister hue it may be said that the gold standard has in no way prevented budgetary exigencies from vitiating the standard of payment. When emergencies arise the gold standard is led rather ingloriously out of the back door. It has been the rule to extol the virtues of the gold standard under normal conditions but its lapses under stress have been carefully ignored. A managed currency can do no worse. His argument here appears to be that if you violate the ten commandments the fault lies in the decalogue and not in the individual who departs from it.

It may be interesting to compare the following with the quotation on page 142. The conversion is startling. It savors of the apocalyptic.

"In truth, the gold standard is already a barbarous relic. All of us from the Governor of the Bank of England downwards, are now primarily interested in preserving the stability of business, prices, and employment, and are not likely, when the choice is forced on us, deliberately to sacrifice these to outworn dogma, which had its value once, —. Advocates of the ancient standard do not observe how remote it now is from the spirit and requirements of the age. A regulated non-metallic standard has slipped in unnoticed. *It exists*. Whilst the economists dozed, the academic dream of a hundred years, doffing its cap and gown, clad in paper rags, has crept into the real world by means of the bad fairies—always so much more potent than the good—the wicked Ministers of Finance." ²⁶

To the suggestion of Hawtrey that international cooperation may be effective in maintaining the stability of gold he fails to enthuse. Any reinstatement of the gold standard would mean that England would be tied to the apron strings of the Federal Reserve Board. The latter, since it had most of the gold, could ignore England but England could not ignore the Federal Reserve Board without courting disaster. Moreover the American being of a suspicious dis-

²⁶ *Ibid.*, p. 187.

position would be apt on the slightest provocation to read into the policy of the Bank of England a maleficent purpose and consider it an attempt to control American discount rates in the interest of Great Britain.²⁷ England would also be compelled to bear part of the "vain expense of bottling up the world's redundant gold."²⁸

Keynes is obsessed by the notion not only that the present supply of gold is excessive and that America is "holding the bag" but that she will have considerable difficulty in extricating herself without loss. She has effectively discarded the gold standard in favor of a managed standard. Her regulation of the discount rate with a view to stabilizing business conditions and the commodity value of the dollar rather than for the purpose of protecting her reserves is a *de facto* abandonment of the gold dollar in favor of a commodity dollar. This fiction while enabling her to surreptitiously introduce a radical innovation without opposition is a costly one. It is costing more than \$500,000,000 per year and will over a long period average more than \$250,000,000 a year.²⁹ If Great Britain returns to the gold standard it simply means that she will share with the United States the cost of maintaining a white elephant. With a serene confidence in the infallibility of his evidence Mr. Keynes omits all documentation. A diligent search on the part of the writer fails to reveal the basis of these enormous figures.

Taking the average amount of gold in the Treasury and in the Federal Reserve Banks for the month of December for each of six years and ignoring the amount in circulation which is negligible we have the following:

Dec. 1919	.....	2,091,....
1920	.....	2,216.2.
1921	.....	3,021.3.
1922	.....	3,909.7.
1923	.....	4,226.4.
1924	.....	4,627.6.
Average	.....	3,348.7.

²⁷ *Ibid.*, p. 189.

²⁸ *Idem.*

²⁹ *Ibid.*, p. 215.

On this average, \$500,000,000 would constitute an interest rate of 14.93%. Gold standard countries do not usually have interest rates as high as this. Mr. Keynes must either be using rates of a country where a managed currency exists, or is speaking in round numbers.

The chief accusation against the gold standard is its failure to maintain the means of payment at a uniform value in terms of commodities. The value of gold depends upon the quantity available relative to demand, other things being equal, which they never are, and the quantity in turn is dependent upon the caprice of fortune and the industry of adventurers.³⁰ The discovery of gold in Alaska or in the Rand is the cause of a revolution in prices with all its concomitant disturbing and inequitable results.

Let us examine this premise. We have attempted to raise this question from the mire of argument to the detached resolution of statistical evidence. There exist fairly reliable indices of prices in terms of gold for England from 1779 to the present. For the United States our information extends back to 1791. We can picture roughly the value of gold for approximately a century and a half. We say roughly, for we only give the value of gold in terms of certain standard commodities. Gold is spent for many other purposes. It is impossible to appraise the influence of rents, wages, education, transportation and sundry other expenditures³¹ upon the value of gold. It is generally accepted that the price of these valuable uses does not fluctuate as readily as that of wholesale commodities. We know that wages lag behind prices, that rents are in many instances fixed by custom or long time leases, that the cost of education such as teachers' salaries and the use of equipment which has been provided in the past and is fairly durable responds but

³⁰ It is only fair to point out here that gold is no longer produced under "Wild West" or "Klondike" conditions. Gold mining as a result of discoveries near the end of the last century has taken its place along with other industries. It shows the same measure of stability of output as any other extractive industry and it is no longer accurate to speak of additions to our gold supply as the result of accident.

³¹ This would include allowances for doctor and medicine, insurance, church, union and club dues and miscellaneous items of expenditure.

slowly to changes in the price level, that public resistance to a rise in the cost of transportation is especially inflexible as witness the difficulties of our street railways when attempting to raise their fares. Our public utilities and railroads are very much regulated and must establish a clear case before our controlling bodies will grant increases in rates. On the other hand the pressure to cut rates is not felt until sometime after a distinctly lower level of prices has prevailed. With respect to entertainment and sundries to which the average workingman devotes anywhere from 15% to 25% ³² of his budget it is also safe to assume that a substantial lag occurs.

Contending on a qualitative basis there appears to be ample justification for the conclusion that the purchasing power of gold varies much less sharply than appears on Chart #5. The index that we have chosen as the measuring rod for the purchasing power of gold does not do the defendant justice. It is, perhaps, the most responsive and sensitive index that we could apply. That we have not applied a fairer standard is due to the inadequacy of our tools. We do know that only a portion of the purchasing power is applied to the goods whose prices in terms of gold have formed the basis of this statistical portrait of the value of gold.

Carl Snyder makes the same point as to the inadequacy of an index of wholesale prices in determining the purchasing power of money by calling attention to the fact that the total amount of checks drawn during the course of a year amounts to approximately 600 billion dollars and payments effected by currency to another 100 billion making a total of 700 billion dollars of exchanges. 700 billion dollars are therefore spent for one thing or another during the course of the year. The total value of the commodities entering the Bureau of Labor Index of Wholesale Prices amounts to 32 billion dollars.³³ Approximately one dollar in every

³² Stecker, Margaret Loomis, *Family Budgets and Wages*, The American Economic Review, Sept. 1921.

³³ Stabilization Hearings, H. R. 7895, op. cit., pp. 593-594.

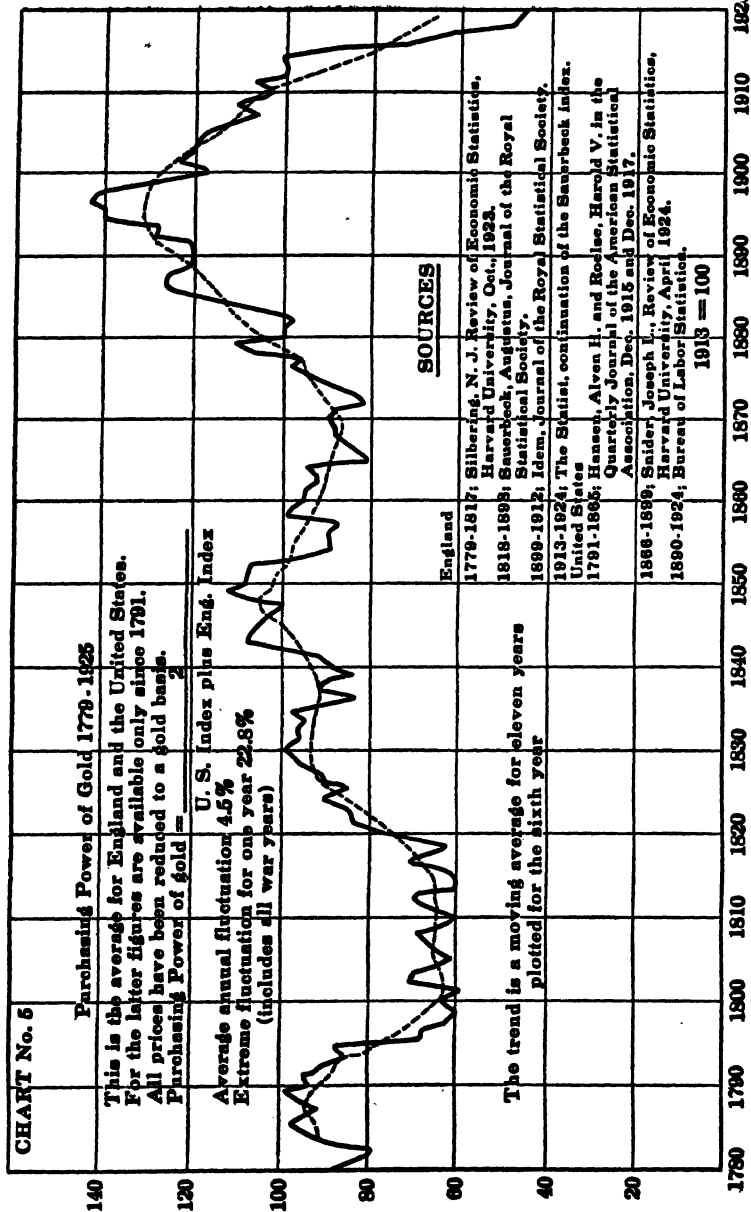


CHART 5

twenty-two exchanged is used for the acquisition of goods at wholesale and yet the purchasing power of money has been measured on the basis of less than five per cent of the testimony of that power, testimony which is susceptible of partial impeachment.⁸⁴ A substantial portion of that power is applied to the purchase of services whose influence tends in almost every instance to diminish the severity of the rise and mitigate the precipitancy of the fall. These services appear to have greater inertia and less momentum, i.e., they will move later, stop sooner and will not go quite so far.

However we need not confine ourselves to an *a priori* consideration of the influence of this lag. Taking the cost of living index of the National Industrial Conference Board and comparing it with the index of wholesale prices of the Federal Reserve Board for the same period we find this qualitative and objective evidence fully justifying our qualitative reasoning. See Chart #6 on next page.

We might well establish from the evidence the rule that the greater the deviation of the wholesale price index the greater the gap between it and the cost of living. As prices go up the cost of living fails to go up as rapidly or as far and as prices fall there is a similar failure to fall as rapidly or as far. When they have stabilized there is a tendency for the two indices to approach each other and remain together.

In any consideration of the value of gold based upon indices of wholesale prices it is well to remember that very significant modifying factors are omitted. It is only fair to conclude that the average annual fluctuation of 4.5% over a period of 145 years is an overstatement and that the actual truth is well within that figure. Now it strikes us that a standard which is about 96% stable does not merit all the unkind remarks that have been made about it. Such a standard is, perhaps, not as near perfection as Ivory Soap or some Americans but is a pretty fair standard just the same.

If we apply another and fairer test we shall see an index that measures gold not only when it is being exchanged for

⁸⁴ *Ibid.*, pp. 593-594.

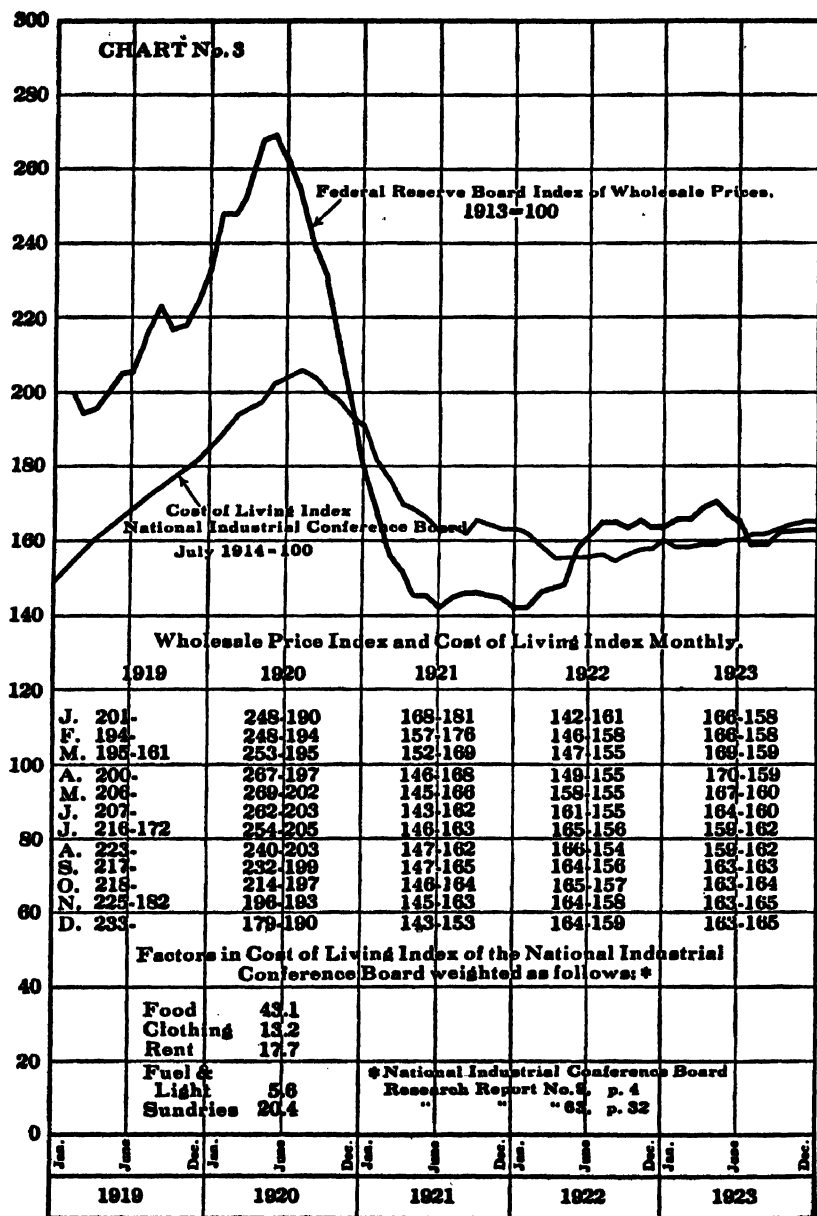


CHART 6

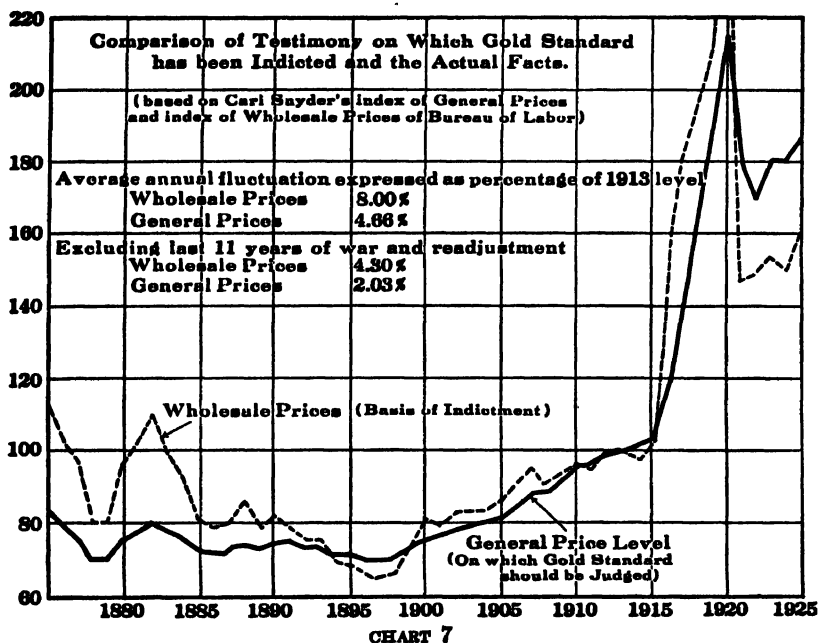
goods at wholesale but also when it is performing its functions of serving as a medium of exchange and a standard of value in all their manifestations. It is not just to convict a defendant when only one-twentieth of the available relevant evidence has been presented unless that evidence is absolutely typical and we are certain that the balance will continue to support the conclusion based upon the first five per cent. The detractors of gold have considered only the wholesale price index. This is not typical and exaggerates decidedly the trend of the bulk of the evidence. Resorting therefore to a fairer basis of judgment let us use Carl Snyder's Index of General Prices which includes not only wholesale prices but also wages, cost of living and rents with the following weights:

Wholesale prices	2.0
Wages	3.5
Cost of living	3.5
Rents	1.0 "

Even this fails to give us an all-inclusive barometer of purchasing power but it is far more comprehensive than the index of wholesale prices taken alone. Using such an index of general prices and applying it to the fifty-one year period from 1875 to 1925 in the United States we find that prices in general have an average annual fluctuation of 4.66%. This apparently unfavorable result is due to the inclusion of the War Period and also to the greater relative importance of the war experience in this shorter period of time. However, if we eliminate the war period and take just the forty years from 1875 to 1914 we find an average annual fluctuation of approximately 2 per cent. Can we justify the exclusion of the war period which seems to constitute the most damning of all the evidence submitted against our standard? If we consider that our most enthusiastic advocates of a manipulated standard admit that their schemes are not war proof and that all plans of stabilization

"Snyder, Carl, *Business Cycles and Measurements*, p. 137.

are likely to break down under the stress of war³⁶ it becomes apparent that we cannot adduce the evidence of instability during an emergency as a reason for the abandonment of gold and the substitution of some other expedient which under stress will show the same weakness. The only fair basis of comparison therefore is that afforded by the



conduct of the standard under normal conditions. It may in fact be argued that even the period from 1875 to 1915 was not normal as far as undue external influences on the value of gold are concerned. The practically concurrent abandonment of silver by a number of important nations during this period placed an abnormal strain upon our gold supply and if the latter appreciated unduly the fault lies with the unusual concurrence of circumstances rather than an intrinsic inaptitude to serve as a stable standard. However, waiving this argument of which we might make much,

³⁶ Fisher, Irving—Goldsborough Bill Hearings, H. R. 11788, p. 151.

we can ignore these extraneous influences and judge gold in spite of them. After all a two per cent per year variation in purchasing power is not serious and a standard that on the average loses no more than two per cent of its value year in and year out is a mighty good standard. Furthermore, its capacity to render such satisfactory service is not dependent upon far-fetched deductive premises. *It is a demonstrated fact.*

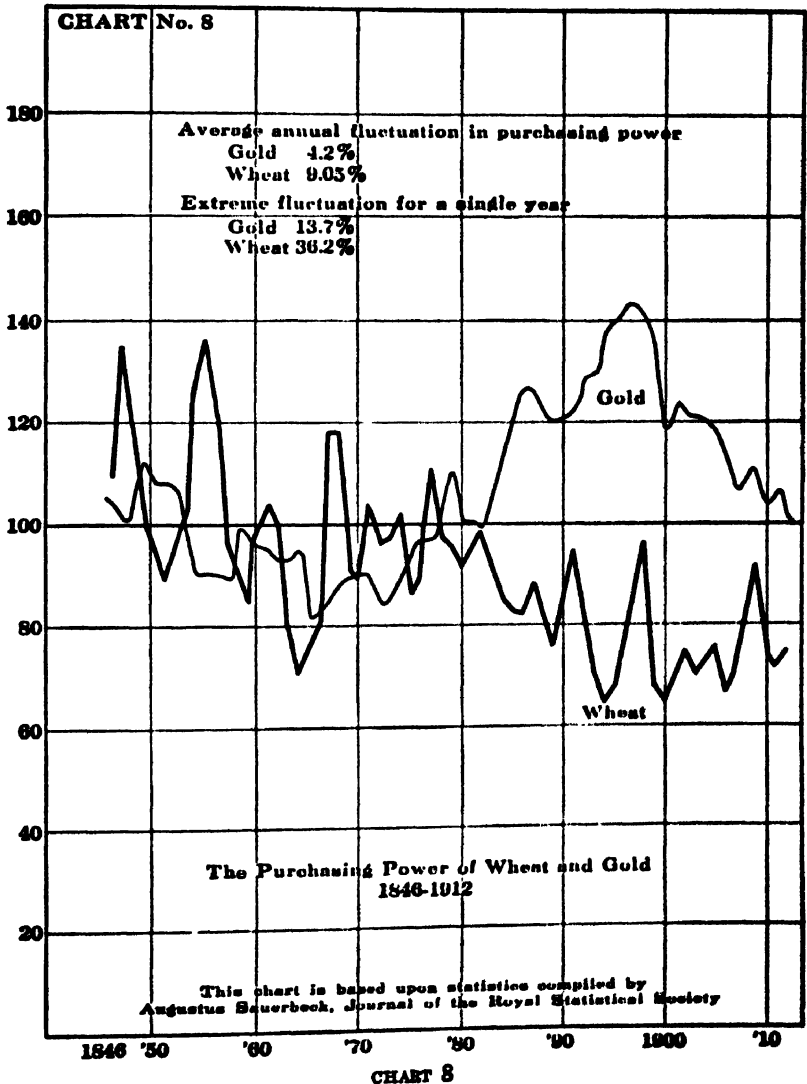
To draw an analogy between gold and the yard, the pound or the quart in order to emphasize the invariability of the latter as contrasted to the former is a spurious bit of logic. The yard, the pound and the quart are physical standards. It is possible to limit and define them with the precision which the physical sciences have developed. The dollar on the other hand is a social standard. It rests necessarily upon human estimates and intangible, incommensurable mental ratios. As a standard it rests upon a complex tapestry woven of emotional impulses and metaphysical strands—and it always will. It were as practicable to devise a norm for love (can anyone doubt its importance) of fear, of appetites, of courage, of honesty, of courtesy, and of honor. As a matter of fact any given society does have its own unwritten and undefined, undefined because they are undefinable, standards of these qualities. They are social standards. Because the dollar has physical embodiment, because its metallic composition and content have been stipulated by law, because it is visible and tangible, because it has weight and occupies space does not make the value which it represents a physical standard. The corporeal abiding place of value, its physical representative may indeed be standardized with all the precision which man requires of his other physical standards—and so it has been standardized—but the spiritual occupant of that dwelling, by its very nature, refuses to yield to the same attempt at exact fixation. Knowing this it were folly to try.

Gold has been subjected to unfavorable comparison with other commodities. We have noted Fisher's allegation that it was less stable in purchasing power than eggs or carpets. Marshall states that gold and silver have been less stable

throughout history than the grains.³⁷ Before examining this contention it is necessary to define stability. Keeping in mind the function of money it would seem that the term referred to steadiness in its purchasing power over commodities. The less it moves during a given period the more stable it is and the more it moves the less stable it is. In the case of money, stability over short periods is more important than stability over long periods. The value of gold may shift quite definitely in one direction for a long time and the actual departure from the starting point during this period may be considerable but if the change is sufficiently slow so that the various social and economic interests can adjust themselves it matters little. If the change does not result in hardship it is difficult to see any ground for complaint. Why growl because gold prices to-day are ten times as great as they were when Charlemagne kneeled before the astute Leo III to receive the crown of the Holy Roman Empire? Are any of us losing any skin as a consequence? It is only where changes occur within short periods, where the effect of contracts is altered, where real wages are disturbed and where the value of investments is impaired or enhanced that they assume importance. Since one of the conspicuous functions of money is that of serving as a standard of value the effect of changes upon debtors and creditors is entitled to careful attention. Irving Fisher has estimated the average length of contracts in the United States at one year.³⁸ For this reason and also because of convenience, the writer has made a comparison of the purchasing power of gold, wheat, pig iron, cotton and a hypothetical tabular standard consisting of wheat, cotton and pig iron. The period covered is from 1846 to 1912, the average for each year the basis so that we get a comparison of yearly averages. Our study is a little more comprehensive than that on which Irving Fisher "proves" his case against gold. The indices used have been those of Augustus Sauerbeck and the purchasing power has been obtained by dividing the index for the commodity by

³⁷ Marshall, Alfred, *Money, Credit and Commerce*, p. 54.

³⁸ Hearings on Goldsborough Bill, H. R. 494, p. 9.



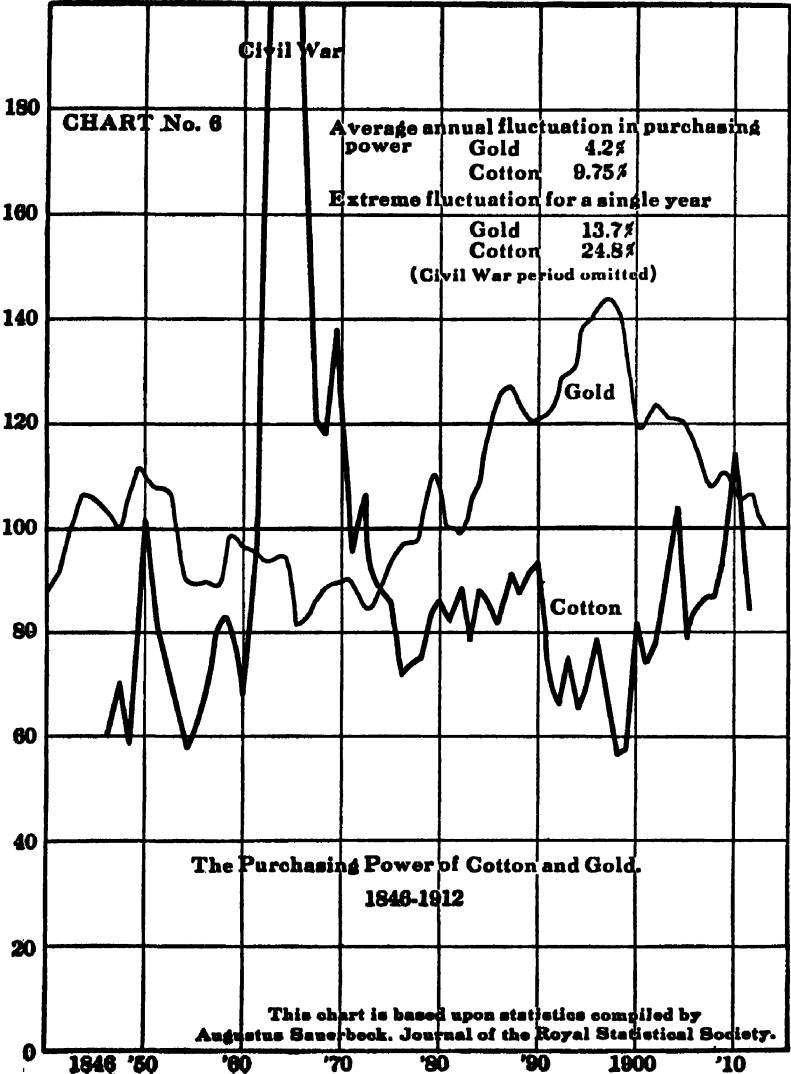
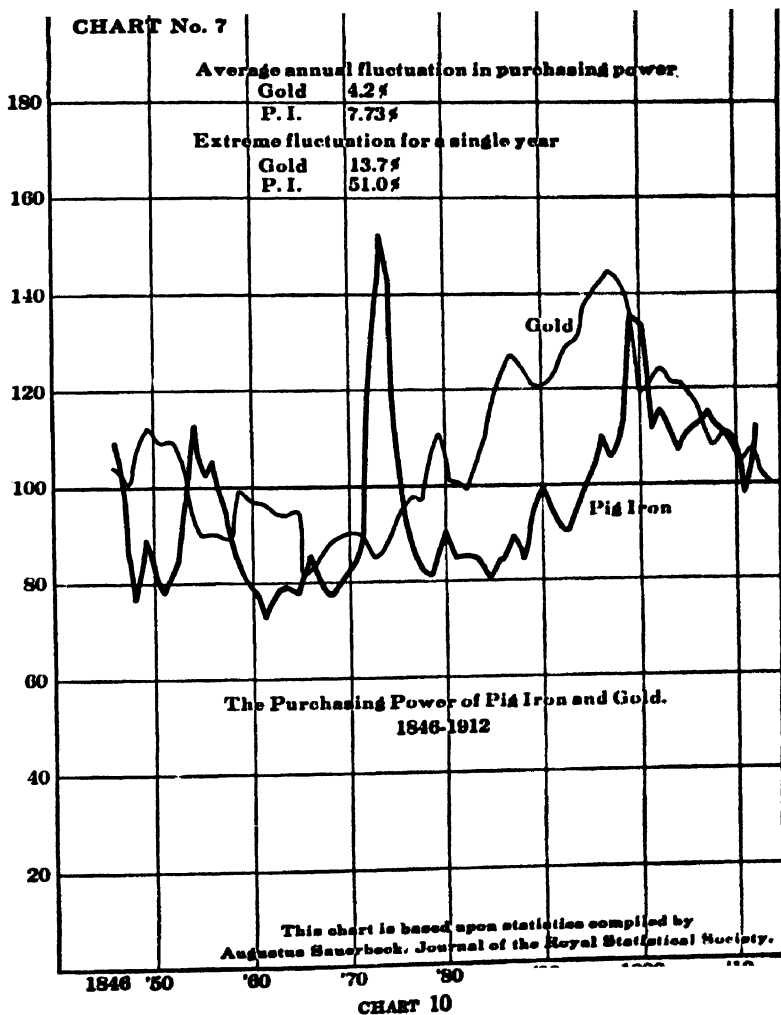


CHART 9



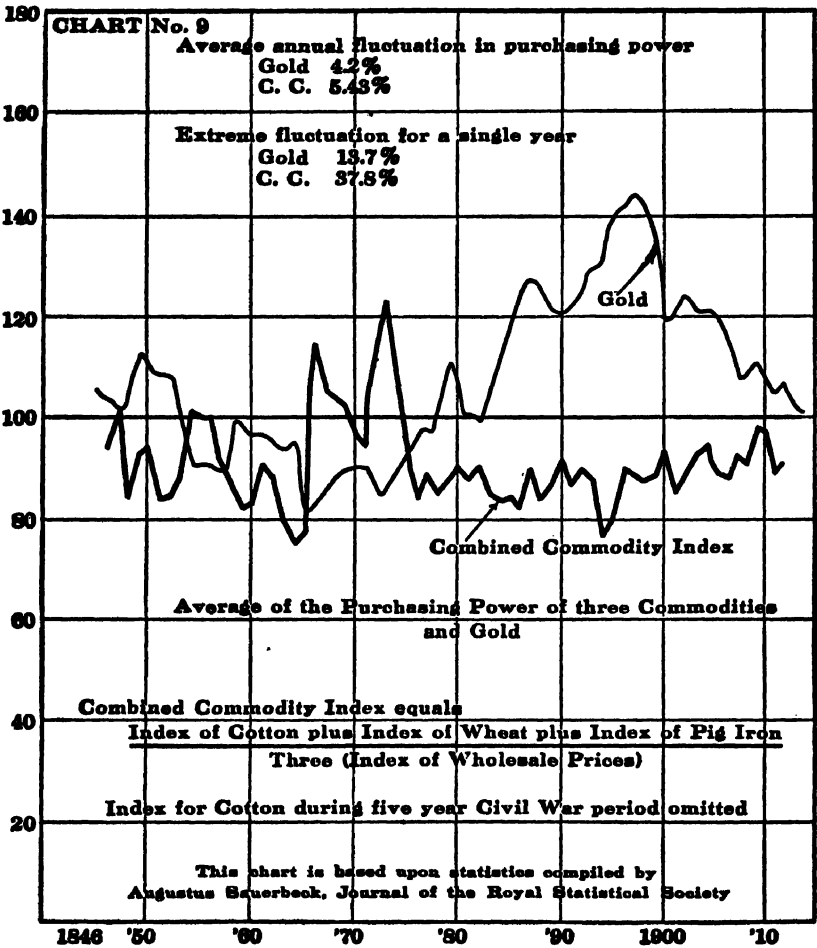


CHART 11

the general index. It is superfluous to say here that gold has survived the comparison with credit. See Charts, Nos. 8, 9, 10, 11.

Also in view of Fisher's statement that eggs would be as stable a standard as gold we have taken the average monthly price index of eggs in the United States and compared that price with the general price level also plotted for months. We have taken the period from 1913 to 1922 for that includes the war and the post war period when gold appears at its worst. The range of fluctuation of gold during this period is from 97 to 230. The range of eggs is from 73 to 268. This does not tell the whole story for eggs each year pass through a cycle as great as that through which gold passed during a period of 51 years. In other words eggs vary in value on the average as much during twelve months as gold does in a half century. Eggs might have been a good substitute for the franc, the mark or the ruble during the post war years, and for other manipulated standards. Its suitability as a substitute for gold is open to question. See Chart on next page.

In the indiscriminate condemnation of gold there is another factor which is usually ignored. Gold is accused of capricious vagaries. Its supply is dependent upon the whims of fortune and the supply determines its value. This is to ignore what every economist preaches, i.e., that demand as well as supply affects exchange value. There is no reason why gold should be an exception to this universal rule. An examination of Chart #5 will reveal three periods of radical deviation from the base. The first is that covered by the Napoleonic Wars, the second is the period from 1873 to 1896 and the third the period of the Great War and its aftermath. War is a period in which all goods except gold and silver are extravagantly consumed in the bid for victory. The amount of goods available for exchange is diminished while the quantity of gold remains the same except for such amounts as may be hoarded.* One might expect prices to

* As a matter of fact the tendency during the past war was in the opposite direction. People were induced by appeals to their patriotism to bring gold out of hoards and deposit it with banks.

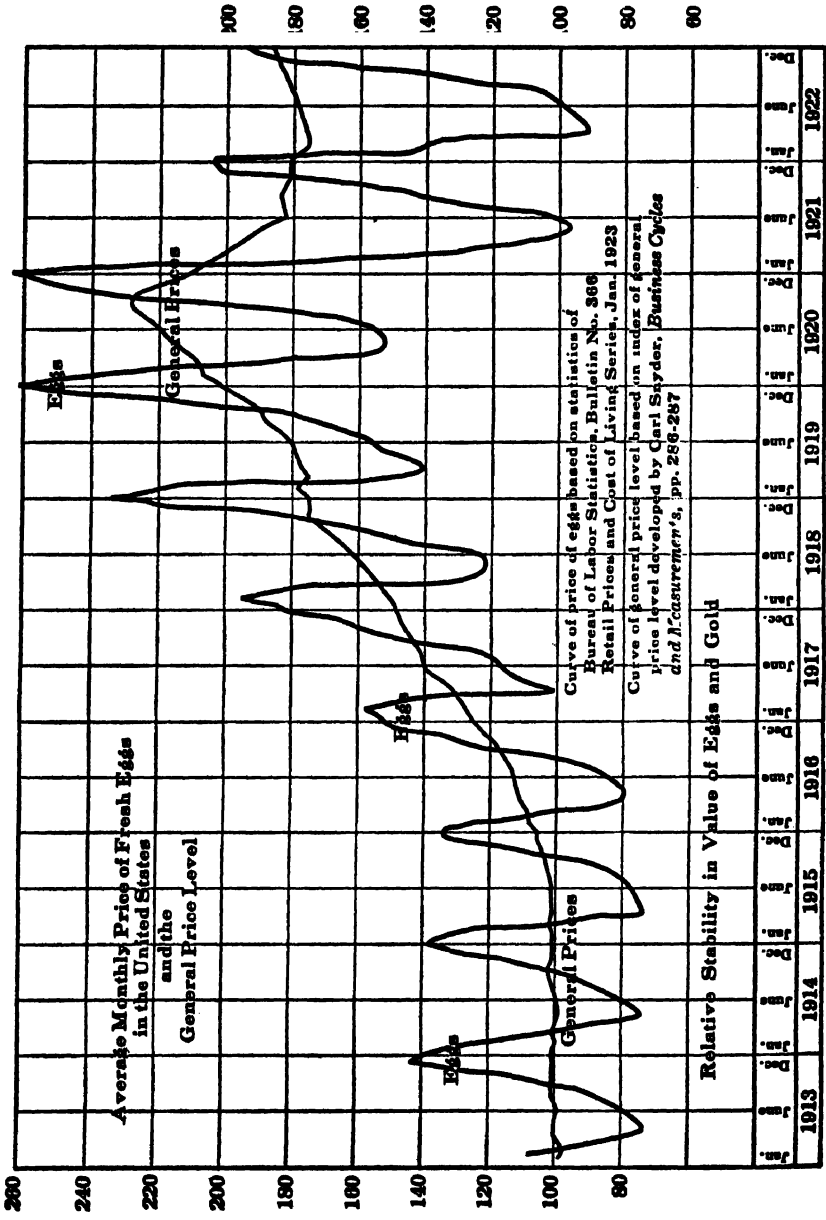


CHART 12

rise and the value of gold to fall and this is precisely what has happened. Shall we blame gold for its inability to contract itself and maintain a stable level of prices? Or shall we place the blame upon men for their destructive instincts and their unholy ambitions? Are the protagonists of unaltering price levels going to assure us that their schemes of managed currency will stand the storm of battle and the strife of war? Their assurances on this point are difficult to locate.

However there are other accompaniments of war which compel us as a matter of justice to gold to examine the indictment. Success in war demands the undivided support of the nation. There must be no political schisms or divided counsels. Nothing dampens the ardor of an enthusiastic patriot quite so effectively, or shall we say alarmingly, as heavy taxation. The alternatives are limited. There are left only borrowing, at home and abroad, and inflation. Inflation is to the harassed Finance Minister, "the wicked fairy," what painless extraction is to the dentist. When his people grumble at the cost and examine the causes and purposes of the war through the eyes of reason rather than those of jingoistic prejudices he can assure them that the enemy shall be made to pay the cost and in the meantime the government will invoke its sovereign power to create means of payment wherewith to meet its bills. Such procedure is not compatible with a continued adherence to the gold standard. The latter is abandoned with solemn vows to return at the earliest possible moment. The gold on hand is used to pay for goods imported from neutral countries. Printing presses meet domestic bills. The area which gold serves has been reduced. Its supply in the noncombatant countries is increased. It is to be expected that prices there will rise and the value of gold decline. That does happen. The fiscal exigencies of war play havoc with sound finance. Frantic Finance Ministers grasp at straws. Inevitable maladjustments and hardships ensue. Is it gold which is at fault? It would be more accurate to say that gold is an innocent victim rather than a pernicious cause.

As for the period of 1873-1896 we witness a concomitance of circumstances that is most extraordinary. We have a decrease in the annual production of gold. We have an abandonment of the silver or bimetallic standards by a number of commercially important nations, and the adoption of *de jure* or *de facto* gold standards. At the same time there takes place a development of the world's resources at a pace which is not only unprecedented but seems incapable of recurrence. This entirely fortuitous coincidence created a demand for gold which forced its value up, forced prices down and furnished the subject matter for much cheap pamphleteering and more flatulent political buncombe. For the sake of argument we will permit the indictment and hold gold to account. Is one offense, the blame for which is open to question, in a century and a half of otherwise good service to be the cause of the discharge of a faithful servant in favor of a glib, sleek applicant whose past does not exist and whose future is a gamble?

Another assumption common to Knapp, Cassel, Hawtrey and Keynes is that the gold standard has been a managed standard for some time. This is rather inconsistent. The first charge against gold is that it is a poor standard. Lest this accusation fail of the necessary effect it is reinforced by the additional damnation of being a managed standard. In other words, an attempt is made to undermine the loyalty of the supporters of the gold standard by attributing to it as a vice that which the ardent cohorts of "reform" esteem as the highest virtue and the distinguishing characteristic of their own schemes, i.e., deliberate manipulation. If by "managed" they mean some measure of intelligent administration dictated by providence and self-interest then the gold standard has been managed. If they mean precise control under the guidance of a mechanical formula then their charge is a palpable error. Central banks worthy of the name are charged with the responsibility of conserving the credit of the nation and providing within limits for the currency needs of industry and commerce. But these banks are no more managers than traffic policemen are drivers of the cars

they direct. There are certain traffic rules which the state in its wisdom has seen fit to impose. These rules deal with our right to drive, the rate at which we may drive, direction, method of turning, etc. Within these rules we may drive where we please, when we please and as rapidly as it suits our pulses. The state does not drive our cars for us—unless we are caught with a load of Scotch. It does not say that on Monday we must drive fifty miles at twenty miles an hour, on Tuesday we must oil our cars, etc. In a similar fashion central banks have been endowed with the authority to apply certain general rules, concerning paper eligible for discount, deposits, reserves, security, etc. These rules have been the result of a long and costly evolution. We are applying the lessons of experience to obtain the maximum social utility in the administration of our banking and our currency systems.

CHAPTER XXI

Organization of Open Market Committee—Open Market Transactions in 1923 and 1924—Price Situation as a Reason for Participation in Open Market—Governor Strong on the Difficulty of Using Price Index as Sole Guide—Checking Up on Effects of Policies—Technical Objectives and Open Market Powers—Quarterly Tax Operations—Foreign Bank Balances—Member Bank Window Dressing—Compensation of Seasonal Flow of Funds—Emergencies—Need for Substantial Supply of Short-Term Government Securities—Subordination of Treasury Policy—Political Danger—Government Securities and Other Central Banks—Government Securities and Legislative Intent—Cultivation of Domestic Discount Market—Need for Such a Market—The Federal Reserve Board and Its Development—Volume of Paper Insufficient for Regulatory Purposes—Defects of Government Securities as Instruments of Regulation—Bills Discounted by Member Banks—Inadequacy of Bank Acceptances—Ample Supply of Government Securities Only Answer—Professor Commons and Open Market Powers—Misapprehension of Effects—"Delicate Control"—Examination of Popular Theory—Fallacies—Operations and Supply of Bank Credit—Supply of Bank Credit and Prices—Statistics.

UP to 1923 the efforts of monetary reformers had been directed chiefly to the discovery of some new single or multiple standard which would provide a greater measure of exchange stability than gold. These proposals we have already reviewed. Wicksell and Cassel suggested the use of the discount rate while Knapp thought the fiat of the government was all sufficient for the purpose of regulating the value of money. England had its Keynes and the United States its Fisher.

In 1922 and 1923 a step taken by the Federal Reserve Banks in the effort to secure harmony of open market investment policy suggested a new expedient to the reformers, namely, the regulation of the quantity of credit and currency in the country through open market operations. This was not an entirely novel phenomenon in banking. The great central banks of Europe had long used their investments as a means of strengthening their discount policies. It so happened that the first experiment in unified open market action appeared to exhibit rather astounding

manifestations of efficacy and many students of monetary reform felt that they had discovered the omnipotent instrument of monetary salvation.

In view of the persistent advocacy of this means of control, it will be necessary to examine the nature and effects of open market operations in some detail.

The Open Market Committee of the Federal Reserve System was first organized in May of 1922 and reorganized in the spring of 1923. Its purpose was to coordinate the buying of the Federal Reserve Banks and to enable the system to work in greater harmony with the Treasury. Benjamin Strong, Governor of the Federal Reserve Bank of New York, has been the chairman of this committee since its organization. We may assume that his statements, provided they are uninfluenced by other considerations, concerning the objects and procedure of this committee are accurate.

The committee buys and sells securities for the system as a whole and executes orders for securities from foreign banks of issue which maintain balances with the Federal Reserve Banks and wish these balances to be profitably employed. New York is the principal market and most of the operations of the committee are carried on there.

The principles which would govern this committee were set forth by the Federal Reserve Board in its annual report for 1923 as follows:

"That the time, manner, character and volume of open market investments purchased by Federal reserve banks be governed with primary regard to the accommodation of commerce and business, and to the effect of such purchases or sales on the general credit situation.

"That in making the selection of open market purchases, careful regard be always given to the bearing of purchases of United States Government securities, especially the short-dated issues, upon the market for such securities, and that open market purchases be primarily commercial investments, except that Treasury certificates be dealt in, as at present, under so-called 'repurchase' agreement.

"In order to provide for the proper administration of the policy

defined above, the board rules that on and after April 1, 1923, the present committee of governors on centralized execution of purchases and sales of Government securities be discontinued, and be superseded by a new committee known as the open market investment committee for the Federal reserve system, said committee to consist of five representatives from the Federal reserve banks and to be under the general supervision of the Federal Reserve Board; and that it be the duty of this committee to devise and recommend plans for the purchase, sale and distribution of the open market purchases of the Federal reserve banks in accordance with the above principles and such regulations as may from time to time be laid down by the Federal Reserve Board."

Testifying in 1926 after several years experience Governor Strong takes us into his confidence and guides us back of the statge where he shows the situations which provoked and influenced the conduct of the committee.

It is important to keep in mind the fact that the committee did not start to function until April of 1923. The holdings of government securities by the twelve Federal Reserve Banks had grown to over 600 millions by the middle of 1922. Many signs at this time pointed to an unhealthy development of business. It was a period of recovery from the depression of 1920 and 1921 and the movement of prices to a normal level and the revival of business seemed by contrast with the preceding period to be moving at a pace which suggested danger. The Federal Reserve Banks commenced to unload their securities until a low point is reached in the middle of the following summer. Business seemed to be coasting along at a good pace. In the fall there appear signs of a slackening and the reserve banks resume the purchase of government securities at the end of the year until we have at the end of 1924 almost the same amount as in the middle of 1922. These open market activities are correlated by observers to apparent changes in business and the price level and the conclusion is drawn that the Federal Reserve Board has deliberately and, what is much more important, effectively used its open market powers to regulate business.

"Thus the open-market operations took money out of

general circulation at a time when, according to our indices, money in circulation was increasing faster than the volume of trade, and later in the year, when these same guides began to point in the other direction the open-market operations put more money into circulation.”¹

It was this coincidence of changes in the holdings of government securities by the Federal Reserve Banks and the concomitant changes in prices and business conditions which led certain students to believe that the former was the cause of the latter and could be used to similar effect at all times. They rushed to Congress, therefore, and proposed to endow this beneficent exercise of discretion with legislative sanction.

This commendable impulse was entirely too hasty. In the first place there is some doubt about the premises. Professor Sprague is unwilling to grant that inflation was actually taking place at the beginning of our period. In every inflationary movement the prices of farm products either lead the way or at least play a prominent part. This was not the case in 1922 and 1923.² In the second place, the Open Market Investment Committee did not commence to function until the spring of 1923 and it is therefore impossible to speak of an open market policy since previous to this there had been no unity of action or coordination.

From this point on we may consider the testimony of the Chairman of this committee.

He speaks with great frankness and we are able to examine the motives of the Federal Reserve Board and the details of policy. Speaking of the reentry of the banks into the open market and their heavy purchase of short time government securities throughout the latter part of 1923 and the first half of 1924 he describes the situation:

“There was developing some recession in business; the New England textile manufacturers had suffered a severe slump; the same being to some extent true of rubber, some branches of the

¹ Stabilization Hearings, H. R. 7805, pp. 329-330. By Rep. Goldsborough.

² *Ibid.*, p. 412.

steel and of other trades. But the most serious difficulty which had developed in any part of the country was the banking situation in the West, especially in the Northwest and Southwest. Banks were failing almost every day." ^{2a}

The farming situation appeared particularly gloomy to him and the imminence of radical farm relief legislation disturbed him. The credit policies of the member banks reflected the situation. They were eager to reduce their indebtedness to the Federal Reserve Banks and in order to accomplish this brought pressure to bear on their own clients. Interest rates in London were lower than in New York which created an additional strain upon the banks since they were compelled to provide sterling exchange. With these conditions in view the Federal Reserve Banks undertook the gradual repurchase of short time government securities with these objects:

"(1) To accelerate the process of debt repayment to the Federal Reserve Banks by the member banks, so as to relieve this weakening pressure for loan liquidation.

"(2) To give the Federal Reserve Banks an asset which would not be automatically liquidated as the result of gold imports so that later, if inflation developed from excessive gold imports, it might at least be checked in part by selling these securities, thus forcing member banks again into debt to the reserve banks and making the reserve bank discount rate effective.

"(3) To facilitate a change in the interest relation between the New York and London markets, without inviting inflation, by establishing a somewhat lower level of interest rates in this country at a time when prices were falling generally and when the danger of a disorganizing price advance in commodities was at a minimum and remote.

"(4) By directing foreign borrowings to this market to create the credits which would be necessary to facilitate the export of commodities, especially farm produce.

"(5) To render what assistance was possible by our market policy toward the recovery of sterling and the resumption of gold payment by Great Britain.

"(6) To check the pressure on the banking situation in the West and Northwest and the resulting failures and disasters." ³

¹ *Ibid.*, p. 335.

² *Ibid.*, p. 336.

During the eight or nine months following this the Federal Reserve Banks purchased \$500,000,000 of short time government securities and at the same time gradually reduced the discount rates until the rate of the New York Bank had reached 3%. In the meantime the rates in London had been raised to 4%. In commenting on this action in the light of experience after the event, he confesses that it might have been better to have stopped repurchasing thirty or sixty days earlier, but since the action depended upon human judgment and not on precise mathematical formulæ there was no other way of determining at the time the wisest course of conduct.

The results were excellent and on the surface seem to offer vindication for those who believe in the efficacy of Federal Reserve control of the credit market. The banks in the West were able to liquidate their borrowings from Federal Reserve Banks (The banks of the State of Iowa reduced their indebtedness to the Federal Reserve Bank of Chicago from \$98,000,000 to \$12,000,000). Our crops were good and coincided with poor crops in other parts of the world so that there was a good demand for them for export. Our low interest rates made it possible for foreign buyers to borrow money in this country with which to pay for this grain and enabled the farmer to secure a better price for his products. It also tended to switch the flow of gold from this country to England and India and facilitated the approach of sterling to parity, a condition necessarily precedent to a resumption of the gold standard by England. Governor Strong emphasizes the fact that the welcome change in conditions while stimulated by the policy of the Federal Reserve Banks was by no means solely due to it. It was the fortunate coincidence of other favorable factors beyond the control of the Federal Reserve Banks, e.g., the large crop of wheat at a time when the rest of the world required wheat, to which the change should be properly attributable.

Governor Strong intimates that a situation like this is best handled by intelligent human judgment and that noth-

ing which Congress can pass can take the place of that. Legislative declaration cannot do it. "The feeling I have about it is that much will be done by promoting and creating incentives for responsible and able people to run this Federal Reserve System." ⁴

Since open market operations and the discount rate are complementary, the question is raised as to the factors which the Federal Reserve Banks take into account in determining the discount rate. Most of the information which the directors consider is submitted in chart form and these charts are hung in the directors room. He enumerates some of them as follows:

Various indices of money rates, employment, production and prices

Sales of retail stores

Sales and stocks of wholesale dealers

Savings banks deposits

Changes in rents

Changes in wages

Movements of funds about the country

Foreign exchange rates

Business profits

Volume of building

Failure statistics

The reports of car loadings

The consumption of electrical energy

All the crop statistics

All the foreign trade reports

Inventories

Speculation

Bank clearings

Changes in deposit and loan accounts of banks

"The movement of prices is, of course, one of the influences or one of the factors taken into account; but it cannot be the only factor." ⁵

He illustrates the difficulty of adjusting the discount rate to the price level alone. A situation exists where the price level has declined slightly and on examination this proves to be due to a drop in the price of cotton and grains. At

⁴ *Ibid.*, p. 339.

⁵ *Ibid.*, p. 359.

the same time, there is a mild speculative boom in stocks. The market is in a speculative mood. The declining price level of itself would require an easing of credit. The condition of the stock market apparently calls for a tightening of credit. If credit were made easier the increase might find its way into the market and accentuate an unwholesome condition. If credit were restricted it might further depress the price of agricultural products, a true devil and deep sea situation.

Further light is cast on the objectives of Federal Reserve policy by the examination of the effects of changes which the Reserve Banks themselves undertake. As repeatedly stated by Governor Strong it is always very difficult to predict the exact consequences and sometimes even the approximate consequences of changes in the discount rates. It is therefore essential to the continuation of intelligent management that the effects of such management be measured from time to time as far as such mensuration is possible. An illustration of such self-checking is afforded in the reply which Governor Strong gives to certain charges in the editorial of the *Commercial and Financial Chronicle* of June 21, 1924. Among other things which it is not pertinent for us to consider at this point the writer of the editorial charges that the discount rates of the Federal Reserve Banks have been too low and that the policy of the Federal Reserve Banks has been consistently inflationary since 1922.

How do the Federal Reserve Banks know from time to time whether their rates are too high or too low? What measurable effects can they observe which will guide them in maintaining existing rates or altering them in one direction or another?

1. As the country grows its population increases, more wage-earners are employed, payrolls are bigger, more food, clothing and shelter are required and a larger number of the services incidental to the maintenance of man's welfare and happiness are provided. This calls for an increasing supply of credit and currency. Is there any way in which we may determine the amount of this change from year to

year? What is a normal increase? We are able to base predictions of the future only on the experience of the past modified by a rational appraisal of altered factors. An examination of the growth of bank deposits for the past fifty years reveals an average rate of increase of 7%. Since this is the period from 1875 to 1925 it is apparent that it includes years of falling as well as rising prices.⁶ If, therefore, the operation of a given rate is coincident with a rate of growth of approximately 7% in bank deposits, then that rate can certainly not be charged with having an inflationary effect and if the Federal Reserve Banks are satisfied with this effect the rate cannot be indicated as inflationary in purpose. The average rate for the five year period, 1922-1926 inclusive, was 7.1%.

2. In much the same fashion the effect on rates of commercial paper are studied.

3. The movements of various factors influenced by credit, such as commodity prices, volume of trade, speculation, the status of agriculture, etc.

4. An interesting weathervane of credit policy which calls to mind the strictures of some of our European critics is its effect on the gold standard. Anent the importance of the gold standard, Governor Strong states: "The restoration of the gold standard throughout the world is of the utmost importance for this country for a number of reasons. We hold between 40 and 50 per cent of the world's monetary gold and if the gold standard is not restored that gold will lose much of its value. If the gold standard is not restored abroad, we may expect further large imports of gold and a credit and price inflation on the basis of the imported gold might be very difficult to prevent. Our foreign trade is in no small measure dependent on stable monetary conditions throughout the world."⁷ The maintenance of easy credit conditions has aided the restoration of the gold standard since it makes it easy for European nations to borrow here

⁶ *Ibid.*, p. 473.

⁷ *Ibid.*, p. 476. See J. M. Keynes, *Com. of Gold and Silver Inquiry*, pp. 131-133; *Monetary Reform*, pp. 181, 183; Charles Gide, *Com. Gold and Silver Inquiry*, p. 151.

and makes this country a less attractive place for the investment of idle funds.

To us the most important features of this exposition of empirical norms is the relative unimportance assigned to the price level. A change in the discount rate has wide and almost unpredictable ramifications. In its incidence it may affect the price level. That is but one of the many possible evidences of its influence.

We have already quoted the orthodox interpretation of the function of open market operations. (See pages 218-219.) This view is usually concerned with the larger aspects of open market policy and customarily relates it to the general price and business situation. Thus the purchase of government securities not only eases the money situation but by providing more credit theoretically stiffens prices and encourages business in two ways, i.e., by providing it with necessary credit on easier terms and stimulating prices. The sale of securities has just the opposite effect and by diminishing the amount of accommodation available or increasing the rate at which it may be obtained or both it acts as a check in speculative periods. Since the major thesis of this treatise is the feasibility of price and business stabilization and the open market powers of the Federal Reserve Banks have been suggested as an appropriate and effective instrument for achieving this purpose it is distinctly in order to examine the incidence of open market policy on the two above-mentioned general objectives. Undoubtedly a central bank's usefulness would be seriously abridged by an inability to enter the market freely. Yet one may question whether this power is indispensable because it enables the central bank to make its other policies effective including the regulation and determination of the price level or whether its value is due to the fact that it enables the bank to realize certain immediate and technical objectives and to minimize the friction of moving parts in the machinery of the banking system. Let us see first what some of these more direct and tangible objects may be.

The open market operations of the Federal Reserve

Banks as conducted since the establishment of the Open Market Committee have made possible a number of short time adjustments which have had the effect of eliminating friction in the operation of our monetary system.

The first of these concerns the quarterly tax operations of the Treasury. The income taxes are payable four times during the year, coming due on the 15th day of March, June, September and December. The payments which the government is required to make do not, of course, coincide with the receipt of taxes, and it is necessary throughout each of these periods to issue short time Treasury certificates of indebtedness in anticipation of tax receipts at the end of the quarter. The obligations are issued to mature at the end of each quarter so as to coincide with the large payments made to the Treasury at the time. In the event that the latter are insufficient new issues to cover the deficiency are marketed. These operations are enormous in volume and if uncompensated will have a disturbing effect on the market. The nature of this disturbance is as follows. The short term securities of the Treasury all mature on the 15th and are almost invariably presented at New York for payment. On the other hand, the checks which represent tax payments are not due until presented at the banks on which they are drawn and this means that a substantial portion of the proceeds will not be available to the Treasury for three or four days. The reserve bank of New York assisted sometimes by other reserve banks advances the Treasury an amount sufficient to make good the shortage. This advance often reaches \$250,000,000 to \$300,000,000. The obligation of the Treasury is evidenced by a certificate of indebtedness with a tenor of one day. At the end of each day the repayments of the Treasury are credited and a new certificate for the smaller amount is issued. As has previously been stated the Treasury pays off its certificates on the 15th and this results in placing a large amount of Federal Reserve credit on the market which would have a decided inflationary effect since that much would be added to the reserves of member banks. If the banks are in debt

to the Federal Reserve Bank they use this newly acquired fund to repay their indebtedness. If not, the Federal Reserve Bank takes government securities out of its portfolio, sells them in the market and takes the funds right back again. The power of the Federal Reserve Banks is here used as an immense sponge with enormous absorbing powers. When pools of credit emerge indicating the presence of excessive funds they are wiped up. When the surface appears parched an intelligent and beneficent power presses enough credit forth to allay an uncomfortable situation. As the tax checks come due and are charged to the accounts of the various banks there results a contraction of bank reserves and member banks would be compelled to come in and borrow to the extent that their reserves have been impaired if the Reserve Bank did not take the initiative. It gradually buys back the securities which it had previously sold, regulating its purchases in such a fashion as to offset the diminution in member bank reserves which is taking place day after day as the checks presented by the Treasury come due. In this connection Governor Strong stressed the great value of having a sufficiently large volume of government securities with which to effect such adjustments.⁸

Another suggested use would be in connection with the manipulation of the balances held in this country by foreign banks. This suggests the similar difficulties which confronted the London market because of the variations in the gold exchange fund held in London by the government of India before the war. Many foreign banks since the close of the war have developed the practice of maintaining a substantial part of their required reserves in the form of deposits in other gold standard countries. Due to the exceptional confidence in the stability of our own position, we have attracted many of these deposits to this country. On March 23, 1927, foreign banks had balances in American banks totalling \$373,590,000 (i.e., banks which are members of the Federal Reserve System). About 85% of

⁸ Stabilization Hearings, H. R. 11788, pp. 443-446.

this was held with member banks in New York City.⁹ It is entirely conceivable that these foreign banks may wish at some time to have these balances held in the form of earmarked gold in which event that much gold will be withdrawn from the bank reserves of the American banks. Two alternatives are available. The member banks may repair their reserves by borrowing that much from the Federal Reserve Bank or the latter may purchase that amount of short term government securities in the open market.

The open market operations also have a value in aiding the banks in their window dressing. This appears to be an entirely reputable practice and is due to the desire of the member banks to maintain their legal reserve requirements and, secondly, to present to their clients in their semi-annual statements a financial portrait which shows no indebtedness to other banks. To illustrate the first. Banks with a wide range of interests and a large proportion of active accounts find it impossible to hew accurately and constantly to the reserve line. Sometimes they are over and again they have an excess of reserves. For banks in the large cities a weekly average is computed and for country banks a bi-weekly average is taken. The banks watch this reserve carefully and if they are running behind toward the end of the week they borrow from the Federal Reserve Bank. At one time the weekly period for all the big cities coincided and this tended to aggravate the situation in New York. The Chicago banks on finding themselves short toward the end of the week would withdraw funds from New York correspondents and this, added to the similar requirements of the local banks, would sometimes necessitate considerable borrowing. In order to ease this condition the Federal Reserve Bank sometimes found it advisable to buy securities.

Since confidence in a bank is essentially confidence not only in its integrity but also in its financial strength, and

⁹ Taken from reports by member banks in the March call of the Comptroller of the Currency and published in *The United States Daily*, July 8, 1927.

since the presence of indebtedness especially on the part of a bank is generally considered an evidence of weakness banks are unwilling to publish statements showing indebtedness to other institutions. The pressure to eliminate such a "taint" from their statements is particularly heavy during the Holiday season, due to the increased demands for currency. In entire sympathy with their desire to present themselves to their clients in their best attire the Federal Reserve Banks purchase securities for a short period at the end of December and this reserve credit enables the member banks to display statements free from items of indebtedness.¹⁰

There is also the seasonal flow of funds into and out of New York. When the farmers are planting their crops and again during the harvest period the banks in the interior call upon New York and reduce their balances. The ebb and flow of such funds can be compensated by open market transactions. Sometimes they take care of themselves but there may be periods when the member banks are already heavily in debt to the reserve banks and if this should coincide with a high discount rate these banks may be reluctant to further increase their indebtedness. At such times the Federal Reserve Banks may find it advisable to ease the situation by purchasing government securities.¹¹

At times entirely unexpected situations develop which call for prompt adjustments. On April 10th, 1926, a run developed on some banks in Cuba. The disturbance appeared in widely separated parts of the island. The Federal Reserve Banks of Boston, New York and Atlanta were all involved either directly as in the case of the Boston bank which maintained an office in Havana and the Atlanta bank which maintains the currency supply of the island or indirectly as in the case of the New York bank, many of whose member banks have branches and clients in Cuba. Through telephonic communication a special train was chartered at Atlanta and transferred twenty seven million dollars of currency to Key West, where it was met by a

¹⁰ *Stabilisation Hearings*, H. R. 11788, p. 453.

¹¹ *Ibid.*, p. 454.

gunboat sent by the Cuban government. The shipment arrived in Havana at 2.00 A.M. on Monday, the 12th, was distributed to the danger points before the banks opened for business and the threatened panic quickly subsided. All this occurred between the close of business on Saturday and the opening of doors on Monday. Total withdrawals of member banks as a result of this incident amounted to \$58,000,000. This could be rendered available in Cuba only by impairing to a corresponding extent the reserves of member banks in this country. By buying government securities from these banks the Federal Reserve Banks were able to step into the breach. A serious situation was averted in Cuba. In this country banking and the money market pursued the even tenor of their ways. An incident like the foregoing has a touch of the dramatic and proves that romance comes at times even into such prosaic professions as banking.¹²

Governor Strong in describing the effect of the quarter day adjustments and the compensations in the money market made necessary by gold movements attributes great importance to the part played by government securities. These give the bank a ready tool with which to increase or decrease the supply of credit in the market. The question is raised then as to the indispensability of short time government securities to the effective operation of the Federal Reserve Banks insofar as the conservation of credit and proper accommodation of business are concerned. He believes that, while it is always desirable to have government securities on hand, the amount which is necessary is a matter of judgment and may at times be very small.¹³

It must be understood that there are no peculiar intrinsic qualities in the short term government securities which make them more suitable instruments of adjustment than other bills which the banks are able to buy in the market. Due, however, to the colossal proportions of our credit structure a certain minimum volume of postponed instruments of payment is necessary in order that its manipulation may have some visible effect on the supply of credit. It is the

¹² *Ibid.*, pp. 477-478.

¹³ *Ibid.*, p. 445.

opinion of Governor Strong that it would be undesirable to have the present floating indebtedness of the government funded into long term obligations until the American discount market developed dimensions which would satisfy the requirements of the Federal Reserve Banks.¹⁴ Speaking in the spring of 1926 he estimates the supply of short time government securities at \$2,000,000,000. This supply the banks do not find excessive. On the contrary it is sometimes very difficult to obtain the necessary amounts whereas it is always an easy matter to dispose of them. Furthermore, in his opinion, the existence of this floating debt is an economy to the government because of the very low rates of interest which they yield.¹⁵

It is only fair to point out in this connection that if the volume of short term government securities were maintained at a given level primarily for the purpose of facilitating the control of credit by the Federal Reserve Banks the time may come when Treasury policy and Federal Reserve requirements move in opposite directions. At the present time these short term obligations can be floated for brief periods at a rate of interest substantially below that which the government is paying on its long term indebtedness.¹⁶ As long as this low rate or the prospects for a declining rate prevail it will be sound Treasury policy to maintain a comparatively large volume of floating indebtedness that the government may take advantage of the savings in interest charges. On the other hand, emergencies are readily conceivable where the interest rate will rise to higher levels and remain there. Such changes from a lower to a permanently higher level do not come suddenly and can to a certain extent be anticipated. If under such circumstances the Treasury should fail to avail itself of the opportunity to fund its floating indebtedness at a low interest rate because of a desire to accommodate the Federal Reserve Banks by

¹⁴ *Ibid.*, p. 449.

¹⁵ *Ibid.*, p. 450.

¹⁶ Nominal rate for Certificates of Indebtedness for first 10 months of 1926 was 3.50% while actual yield averaged for the same 10 months was 3.345%. The rate on outstanding long term debt was a trifle more than 4%. Report of Treasury, 1926, p. 47.

maintaining a supply of short term obligations, it will be in the position of paying a rate of interest on part of the government's indebtedness higher than necessary. The excess may well be regarded as a subsidy to the system, a fractional compensation for the many valuable services rendered by the system to the government. In the latter light it could certainly be strongly defended. There is unfortunately no present apparent authority in the law which would permit the Secretary of the Treasury to modify the fiscal policies of the government in order to facilitate the discharge of the Federal Reserve System's functions.

An example may illuminate this point. Let us assume that the Panama Canal Loans approximating 85 million dollars and sold actually at a price which yielded the investor less than 2%¹⁷ had been offered in the open market as Treasury notes in order to provide short time obligations, which would enable the Federal Reserve System to effectuate its policies of credit control. With war breaking out in Europe and the participation of the United States in the conflict interest rates climbed in spite of the subordination of the Federal Reserve System to the Treasury and the adoption of a discount policy dictated by the fiscal exigencies of the government rather than the supply and demand of capital and credit. Instead of paying a rate of less than 2% the government would probably have been compelled to pay as much as 6%.¹⁸

This hypothetical burden on the government might have been overlooked during the stress and strain of wartime but is it likely to be ignored in time of peace when the ambitious leaders of both parties are searching for issues? An increase of as much as 1% in the rate paid on \$2,000,000,000 would

¹⁷ Aug. 1st, 1906, \$54,631,960; Nov. 1, 1908, \$30,000,000; rate 2%; price received for 1st, \$103.513, for 2nd, \$102.436; Statistical Abstract, 1925, p. 199. This low rate was undoubtedly due in part to the fact that these bonds had the circulation privilege. However, other government bonds without this privilege were selling at this time at a price yielding about 3%, which still leaves ample margin to furnish our point.

¹⁸ This was true of the following series: Series T.J.—1921—issued June 15, 1920; Series C.—1921—issued Aug. 16, 1920; Series T.S.—1921—issued Sept. 5, 1920. Annual Report of Treasury, 1920.

amount to \$20,000,000 and twenty million dollars will pay a lot of salaries. The political possibilities of a Treasury policy designed to accommodate the Federal Reserve System are apparent.

Unless we can find a satisfactory substitute for the short term government obligations we are likely to witness a period where the power of the Federal Reserve banks to make their rediscount rates effective and control the volume and price of credit will be very seriously impaired. To what extent have the banks been dependent upon the supply of these instruments and what are the prospects of emancipation from this dependence?

1st Column—Short Term securities of U. S. Government outstanding at the end of each month. These consist of treasury notes and loan and tax certificates of indebtedness. Figures are taken from Annual Report of the Secretary of the Treasury, Fiscal year ending June 30, 1926, pp. 518-521.

2nd Column—Holdings of U. S. Government short-term securities by Federal Reserve Banks on the last Friday of each month in millions. (Annual Reports of Federal Reserve Board).

1917			1919		
A.	265	23.450	J.	4230	206.532
M.	668	23.338	F.	5504	155.068
J.	273	34.302	M.	5414	173.797
J. ....	...	35.818	A.	5988	191.501
A.	550	32.521	M.	4944	201.800
S.	1076	39.876	J.	3264	204.104
O.	2315	55.876	J.	3314	212.028
N.	1879	41.792	A.	3808	213.411
D.	691	58.883	S.	3162	251.081
			O.	3462	274.325
			N.	3462	288.032
			D.	3260	273.507
1918			1920		
J.	1384	72.669	J.	3125	276.421
F.	2469	169.707	F.	2936	267.511
M.	3251	252.579	M.	2278	263.056
A.	3936	37.407	A.	2734	266.649
M.	2516	92.082	M.	2837	279.531
J.	1516	218.839	J.	2486	325.434
J.	2145	16.922	J.	2433	296.520
A.	2820	25.772	A.	2571	273.701
S.	4098	50.098	S.	2348	270.623
O.	3286	322.060	O.	2337	266.434
N.	2183	92.664	N.	2475	293.676
D.	2966	282.677	D.	2300	261.263

1921			1924		
J.	2351	Statements of	J.	4966	134,058
F.	2481	Resources and	F.	4949	107,773
M.	2475	Liabilities of	M.	4796	146,963
A.	2548	Federal Re-	A.	4796	244,443
M.	2572	serve Banks	M.	4796	282,390
J.	2761	for 1921 and	J.	4543	335,025
J.	2633	1922 do not	J.	4543	408,821
A.	2853	permit a sep-	A.	4540	492,308
S.	3009	aration of	S.	4557	509,640
O.	2634	short term	O.	4554	538,733
N.	2864	from long	N.	4528	543,747
D.	2755	term govern-	D.	3626	464,895
		ment securi-			
		ties.			
1922			1925		
J.	2783		J.	3726	314,416
F.	3129		F.	3714	301,485
M.	3472		M.	3376	278,206
A.	3582		A.	3375	263,281
M.	3581		M.	3374	263,042
J.	4001		J.	2983	284,992
J.	4010		J.	2981	259,425
A.	4236		A.	2975	260,401
S.	4042		S.	3001	287,248
O.	3744		O.	3000	270,870
N.	3701		N.	2999	285,551
D.	4235		D.	2930	313,743
1923			1926		
J.	4587	323,837	J.	2982	290,655
F.	4578	333,877	F.	2981	266,875
M.	4631	221,060	M.	2431	259,783
A.	4595	157,357	A.	2431	293,586
M.	5249	165,064	M.	2430	293,569
J.	5136	76,151	J.	2095	303,386
J.	5093	73,082	J.	2094	287,529
A.	5049	80,801	A.	2088	276,471
S.	4996	128,900	S.	2058 ²¹	251,482
O.	4992	19,149	O.	2060	253,736
N.	4991	85,663	N.	2060	259,229
D.	4966	104,058	D.	1837	276,856

These figures demonstrate a number of things. In the first place the supply of short time government paper has during and since the war been at all times more than sufficient to supply the needs of the Federal Reserve Banks. On the average the amount held at any time by the latter has been well below ten per cent of the supply available. How great the supply must be in order to make facile purchase and dis-

²¹ Annual Report of Treasury, 1927, p. 526.

position by the Federal Reserve Banks possible, there is no means of determining. Governor Strong's opinion that a supply of two billion is not excessive has previously been adverted to.

Another fact which stands out is the steady decline in the volume of short term securities. A high point is reached in February of 1919 at which time \$5,504,000,000 is outstanding. There is a fairly rapid decline so that by the end of the next year the amount stands at \$2,300,000,000. This is followed by a steady rise culminating in a maximum of \$5,249,000,000 in May, 1923. The first high point is probably the result of the fiscal exigencies of the early post-war period and the second can be explained by the early maturity of the Victory Loan. In 1919 the total amount outstanding consists of Certificates of Indebtedness. Treasury notes do not appear until June of 1921. There is a steady rise in this type of short term obligation so that in May of 1923 we find the floating indebtedness of the Treasury consisting of \$4,176,000,000 of Treasury notes and \$1,073,000,000 of Certificates.

As we recede further and further from the war period and the extraordinary strains which it placed upon the finances of the country, it is reasonable to suppose that such a part of our floating indebtedness as has its origin in the special war requirements of the government will decline and eventually disappear. It will either be cancelled by Treasury surpluses or will be funded into some other more convenient form particularly if a prospect of higher interest rates should develop. The only short term government obligations which will then appear as a regular feature of the open market will be those certificates of indebtedness which are issued by the Treasury in anticipation of the quarterly payments of the income tax. Other taxes are paid in a fairly even stream and the proceeds can be used to meet a proportionate part of the requirements of the Treasury. So that if the government is maintaining a balanced budget it is not likely that the quarterly issues of certificates will exceed the amount of the income tax due at the end of that quarter. The income

tax for 1925 amounted to \$1,761,659,000,²⁰ constituting a trifle more than 60% of all receipts excepting the income of the Post Office Department. Barring the expense of the latter department the budget for that year amounted to approximately three billion dollars. While we may look for a slight decrease in this as we liquidate the costs of the war and realize the debt payments of foreign nations, the normal growth of the country and the present tendency to increase the functions of the Federal government and to look to it for the solution of all ills will in all likelihood absorb these economies and lead us beyond. Under prevalent conceptions of justice in taxation it is very probable that the major portion of the Federal government's fiscal sustenance will in the future as in the immediate past be derived from the income tax. The prospects are therefore excellent that we shall always have a supply of short term government securities. That they will in normal years amount to two billion dollars is scarcely possible. This amount exceeds the present total of income tax payments and will in the absence of unusual emergencies exceed the total of that type of revenue for some years to come. However, it is in anticipation of quarterly and not annual payments that future Treasury certificates will be issued. It is difficult to see how this amount based upon the legitimate needs of a Treasury functioning under a solvent government in normal years can exceed a half billion dollars. Furthermore, this supply will not be constant but will on the contrary touch a maximum point somewhere this side of a half billion only four times a year and will for the greater part of the time be considerably less than this and may in fact be actually non-existent at times. As a means of supporting the efforts of the Federal Reserve Banks to enforce its interest rate the future supply of short term government securities is obviously a thin reed to lean upon.

A further examination of the character of the short term obligations of the Federal Government will aid us in determining the probability of a supply in the future suffi-

²⁰ Statistical Abstract, 1925, p. 169.

ciently great to enable the Federal Reserve Banks to make their control of the money market effective. The tax certificate did not constitute a part of government financing prior to 1917, a fact which by itself indicates that the framers of the Federal Reserve Act did not contemplate its use in effectuating a control of the volume and price of funds in the market. When this obligation made its appearance in 1917, it was used to finance an immediate emergency plan of war financing. The urgency of immediate requirements did not permit the delay which would have been necessary to lay the foundations of a broad scheme of taxation commensurate with the character of the emergency which confronted the nation nor did it permit the flotation of a debt of a more permanent nature. Thus the treasury certificate in a sense manned the citadel of government finance until Uncle Sam was able to mobilize his financial platoons. It served a further purpose in equalizing expenditure and income from war loans. By their issue the government was enabled to anticipate the proceeds of loans and as the latter were made they were used to retire the short term securities which were outstanding. Unfortunately, as the war proceeded, expenditures of the government mounted more rapidly than the income from the loans and as a consequence the margin left after providing for outstanding certificates declined until the floating debt actually exceeded the amount realized from the loan. When the Fifth Loan was floated, the allotment for which was \$4,500,000,000 certificates to the amount of \$6,157,000,000 were outstanding.

The Treasury, therefore, was in a fair way headed for the same financial morass in which the governments of France and England found themselves at the conclusion of the war with unmanageable floating debts which harassed Treasury officials and impeded the efforts of the governments to finance themselves "naturally." That is to say, after a point is reached where the well of liquid capital in a country is unable to absorb the obligations of the government and reliance must be placed upon short term debts

held to an increasing extent by central banks under pressure or other banks under the artificial stimulus of low rediscount rates, these short term securities have degenerated into the poorly disguised instruments of inflation. This ignominious part was assigned to the Ways and Means advances of the Bank of England and Treasury bills, and the *bons de la defense nationale* in France.

In view of the difficulties caused by a saturation of the market by short term securities during the war a caution is suggested. While every normal person hopes that no emergency of the proportions of the World War will again confront this country such an excellent hope is by no means an assurance that we will be spared further and equally serious crises. If and when we are faced by such an extraordinary situation, it will be desirable to have the government unhampered by the presence of a floating debt which may impede its freedom of movement and impair the effectiveness of such measures as it may find necessary to take. True, an unbonded debt of half a billion is not likely to embarrass the Government of the United States at any time, but a debt of as much as two billion is capable of considerable mischief. There is at any given moment but a certain amount of liquid funds seeking investment. If a substantial portion of these are already buried in an existing short term debt the government can fulfill its needs only by an increase in the means of payment or by an increase in the rate of interest sufficiently great to divert funds from other uses. Each method has its drawbacks and it were well if our finances were so conducted that the government might in such a situation start in a clear field. The present Secretary of the Treasury is attempting to confine the Certificates of indebtedness to the purpose of equalizing government expenditures and income made necessary by the periodic character of payment of the most substantial item in Federal government revenue. In this he has been successful and all issues since October, 1922, have been in anticipation of taxes.²¹ Even with this entirely salutary restriction he ex-

²¹ Report of Secretary of Treasury, 1923, p. 51.

pected that it would be necessary to maintain outstanding at all times at least a billion dollars of tax certificates to provide for the quarterly tax payments.²² His prediction proved valid for 1923 and 1924, but at no time during 1925 or 1926 have these tax certificates reached a billion, in fact the average outstanding during these two years has been below seven hundred million.

In 1921 the Treasury introduced the Treasury note, a short term instrument designed to take the place of the Loan Certificate of Indebtedness. As a general rule their tenor is longer than that of the Tax certificates and varies within a greater range. Whereas the Tax certificate should not exceed twelve months and should in most cases be for only three the maturity of the Treasury note will depend upon the particular refunding task in hand. Thus the maturity of the five issues made in 1922²³ varied from three to a little more than four years, whereas the issue just offered by the Treasury and dated Nov. 15, 1927 will mature in 7 months.²⁴

The purpose of the Treasury note is to enable the government to rearrange and divide the maturities of our vast war loans. It would be impracticable to pay off a loan of three billion in a single year, and if the incidence of such a debt can be spread over a period of years its payment comes within the scope of convenient possibility. The Treasury note is the device by which this is being accomplished. A study of our war debt reveals the fact that a wise distribution of maturities will call for a continuous supply of Treasury notes for the next twenty years. If these are acceptable to the open market investment committee of the Federal Reserve Banks as a tool for effectuating its control of the supply of credit and its cost, there is little need for apprehension on the score of a failure of suitable forms of short term securities.

At this point a number of questions suggest themselves.

²² *Ibid.*, 1922, p. 172, Circular letter addressed to Federal Reserve Banks, Oct. 9, 1922.

²³ *Ibid.*, 1923, p. 55.

²⁴ New York Times, Nov. 7, 1927.

WAR DEBT OF THE UNITED STATES

Title of Loan	Due Date		Amount Outstanding June 30, 1926
	Optional	Necessary	
1st Liberty Loan	1932	1947	\$1,939,212,300
2nd Liberty Loan	1927	1942	3,104,527,800
3rd Liberty Loan	....	1928	2,488,272,450
4th Liberty Loan	1933	1938	6,324,471,950
Treasury Bonds	1947	1956	2,305,933,900

Annual Report of Treasurer, 1926, p. 500.

Do other great central banks depend to a substantial extent upon government securities to aid them in enforcing a discount rate and in controlling the money supply?

Was it the intention of the framers of the Federal Reserve Act to have the Federal Reserve Banks employ government securities for this purpose or did they have in mind the gradual development of a wide discount market well supplied with another type of security which could be employed by these banks for the purpose of making their control more effective?

What are the intrinsic merits and defects of government securities as compared to other types of paper in serving this purpose?

From the point of view of necessary freedom from subservience to the government is it prudent to express a dependence upon the existence of a minimum volume of government securities and in the development of open market policy to demonstrate the indispensability of such an amount of government indebtedness?

As to the first question the answer is an unqualified affirmative. In view of the vast extent of the discount market in London, it is rather surprising to find the Bank of England largely dependent upon the purchase and sale of government securities for enforcing its rate. Instead of using short term government securities or commercial bills the bank uses consols, a government debt without maturity.²⁵

²⁵ Interviews on the Banking and Currency Systems in England, etc. National Monetary Commission, p. 51. See also Banking and Currency Hearings, Senate Document 232, Vol. I, p. 361.

Before the war the Reichsbank used German Imperial Government securities to modify the lending power of banks and add to its own ability to control the price of credit.²⁶ That it also used short time treasury bills in order to eliminate the difference between its own rate of discount and that prevailing in the market is stated in the German Bank Inquiry of 1908.²⁷ Conant describes the effort of the German Reichsbank to make its rate effective in 1904 by selling 80,000,000 marks of Treasury Bills.²⁸

The Bank of France has never been so dependent upon a manipulation of its assets to enforce its rate. This is due to the fact that the Bank of France is not only a bankers' bank but also to a far greater extent than is true in the United States and England and Germany furnishes credit and banking facilities directly to the French people. With its main bank and more than 600 branches, it has an opportunity to influence directly the cost of credit which is not available in a comparable degree to the other central banks we have mentioned.²⁹ This power has not been seriously injured by the war and with a government floating debt of more than 68 billion francs and a funded debt almost three times as great, a scarcity of suitable forms of investment may be counted as the least concern of the Bank of France. The latter part of this statement holds with almost equal force for the Bank of England. In the case of the Reichsbank the amount which may be advanced to the government and invested in government securities is strictly defined by the Dawes Plan and if the use of securities within these limits should prove inadequate for the purposes of the Reichsbank, it must of necessity depend for its power upon its direct contacts with the public and its ability to purchase and sell commercial instruments of credit not falling within the prohibitions of the Dawes Plan.

Since the Federal Reserve Act was not the product of one

²⁶ *Idem.*

²⁷ National Monetary Commission, Senate Document No. 407, Vol. I, p. 1026.

²⁸ *The Principles of Money and Banking*, Vol. II, p. 235.

²⁹ Maurice Patron, *Bank of France*, pp. 63-69.

mind or a group of minds but rather the culmination of the collective banking experience of the world adapted as far as human perception and foresight could make that possible to the peculiar requirements of this nation, it is rather difficult to examine the state of mind of the framers and give a definite answer to the second question, i.e., whether government or other securities should be used to make open-market powers effective. The document as finally passed was the ultimate fruit of evolutionary process in banking experience and monetary philosophy. "To buy and sell, at home or abroad, bonds and notes of the United States," is the clear language of the Act itself. The purpose for which this power was granted is not susceptible to precise delimitation. The experience of European banks of issue clearly suggested the need for this power of dealing in government securities. These banks used that power to acquire necessary earnings and also to modify the movements of gold. The protection of their reserve was undoubtedly the chief purpose to which the control of the money market was dedicated. There is a complete lack of evidence to show that this power was used for a conscious and direct control of prices. Like the power to deal in bullion, it was one of the incidental means by which a central bank was enabled to discharge its functions. The sale and purchase of securities in the open market, both government and commercial, could not have been counted upon heavily to enforce a discount rate. In the first place, the amount of government securities available at the time of passage of the Act was almost negligible. Excluding the Panama Canal bonds, which had the circulation privilege, there were scarcely \$60,000,000 of government debt even remotely suitable for investment by a central bank.³⁰

There was a strong feeling among students as well as legislators and bankers that the development of a wide discount market was desirable for a number of reasons. In the first place, the inability of our national banks to accept bills of exchange made it necessary for our importers and ex-

³⁰ Statistical Abstract U. S. 1925, p. 190.

porters to do their financing almost entirely through London. This involved certain disadvantages. London bankers in certifying the soundness of a merchant's credit through their acceptance of his bills were performing a valuable service for him and in accordance with a well established custom in the business world they did so for a material consideration only. In the eyes of many Americans this constituted an unnecessary tribute levied by London upon the foreign trade of the United States. If we could develop a free discount market to which the idle funds of the country would be attracted, this service charge would remain in the United States. As an argument it had the taint of mercantilism but that apparently did not weaken its force. Intimately allied to this consideration was the fact that the American who was compelled to pay for his exports in sterling and receive payment for his exports in the same form took the risk of exchange. The Englishman paid for his cotton in the same monetary units which he received when the cotton passed on in the same or another form. In his calculations it was never necessary to consider the possibility of a change in the price he paid for his cotton because of a change in the rate of exchange. He bought and sold in the same media of trade. The American exporter, on the other hand, was compelled to accept a draft in sterling and since he could not use this directly in payment of his own taxes, payrolls and materials, it was necessary to convert the right to receive pounds into dollars. As long as the gold standard obtained in both countries, the fluctuations were not great and a certain measure of protection could be provided by selling his future rights. Nevertheless, it was the American who had to take these precautions and their direct cost as well as the resulting inconvenience fell upon his wallet. The American importer was in the same position. His bill for imported hardware was payable in sterling. If he dealt on a close margin the change in the price of sterling was sometimes sufficient to wipe out his anticipated profits. The English exporter could carry on serene and undisturbed.

His goods were sold for sterling. His bills were payable in sterling. With the risk of exchange he need not concern himself.

In the second place, such paper as required the assistance of an English bank to facilitate its disposal at a good price necessarily found its way into English hands. There it could be scrutinized carefully and at leisure, scrutinized with a view not to the soundness of the risk but rather for the purpose of extracting such trade information as might, when turned into proper English channels, be used to good purpose by English merchants. Of course this may have been but one of the many odd prejudices founded upon empty superstition in which this country abounds. Nevertheless, it made American bankers and American business men yearn for the privacy of a domestic discount market.

Again it was somewhat annoying to the pride of the Yankee to realize that not only his direct trade with England, in both directions, but much of his trade with the rest of the world must needs be financed by sterling bills. A draft in dollars might be a very good draft but merchants in the far corners of the world were interested in bills which could be readily sold and they knew from experience that the ready saleability of a sterling bill could always be depended upon.

Another motive in the desire for a free discount market was a genuine concern to redeem the idle funds of America from a dependence upon the stock market for profitable investment. It is a well-known fact that the balances which the banks of the interior kept with the great financial houses of New York, and on which the latter paid interest, were employed in loans on stock market collateral. In normal periods these loans were highly liquid, but in times of stress they became frozen and the primary and secondary reserves of many country banks on such occasions were sealed in an employment from which they could find no escape. If there could be developed the free opportunity of investing such funds in bills of exchange which represented goods in process of distribution the movement of such goods into the channels of consumption would automatically liquidate the

paper which had been issued to finance that distribution. Such employment would reduce the volume of funds available for stock market operations, and since the price of the means of speculation would thus be raised, the incentive for speculation would be correspondingly diminished.

There was also the feeling that the development of a discount market would immobilize the credit of the country and give to investment power an automatic fluidity which was as desirable as it was lacking at this time. Reference has already been made to the tendency of funds to find their way to New York and to be employed for call loans on stock market collateral. This tended to concentrate these funds in a single place and lead to their devotion to a single purpose which was not entirely salutary.³¹ If the banks of the country could be persuaded to invest their marginal funds in bank acceptances, both domestic and foreign, and if a sufficient supply of the latter could be provided then the banks would be emancipated from their subservience to the New York stock market and an unwholesome concentration of funds would be averted.

Another motive closely related to the former was the hope that the existence of a discount market might raise the character of the credit instruments by which so much of the business of the country was financed. A governor of the Bank of England is reported to have once said that it is the first

³¹ "The piling up of these deposits in the banks of New York lowers the rate of interest on call money and incites speculation. If Union Pacific, for example, pays dividends of ten per cent and is selling at 170 or under, it yields 5.6% of the purchase price. If the purchaser can borrow money on call at one and one-half per cent, as is the case now, he gains a profit of three and one-half to four per cent as long as such conditions continue. Speculations thus started may run a considerable time and draw in a large number of participants and extend sympathetically to the whole list. Speculators may bid up the price of the stocks, and the rate of interest at the same time, until a climax is reached. Then a reaction will come, stocks will fall, margins will be exhausted, speculators will be sold out, banks may fail, liquidation will pursue its inexorable course, and a tabula rasa will be made, upon which a new cycle of inflation and collapse may take its start." Horace White, *The Stock Exchange and the Money Market*, Annals of the American Academy of Political and Social Science, 1910, p. 87.

See also Hollander, Jacob H. *Bank Loans and Stock Exchange Speculation*, Senate Document 589, National Monetary Commission.

duty of a banker to learn the distinction between a mortgage and bill of exchange. The liability of a commercial bank to its general depositors is payable on demand and it is therefore the part of prudence of such a bank to maintain its own assets in such a liquid form that they can be realized on short notice. To offer a depositor who wishes to cash a check a share in a good real estate mortgage will hardly do.³² The great defect of American commercial paper is that it is impossible to tell from the nature of the instrument whether the proceeds have been used to facilitate the purchase and sale of goods or have been sunk in the business as permanent capital. The predominant type of paper in this country has been and still is the single name unsecured paper.³³ Insofar as this paper is based upon actual commercial transactions no harm will result. The consummation of the underlying transaction in goods will liquidate the debt. Unfortunately, there is no internal evidence in the paper itself which indicates the purpose for which the proceeds were used. It was hoped that with the encouragement of the Federal Reserve Board and the establishment of special incentives in the form of favorable rates the business community could be persuaded to adopt a new type of paper with two names instead of one and known as trade and bank acceptances. Such paper bore outward evidence of the transaction in goods on which it was based and as such complied with the technical requirements of the Federal Reserve Board for eligible paper.³⁴ It is quite certain that the campaign to improve the formal attributes of our instruments of credit did not meet with the success which had been anticipated. The issues constitute one of America's current banking controversies. It does not fall within the scope of this paper to weigh the merits of this dispute. It is sufficient to cite it as a motive for the development of a discount market.

None of these motives can be said to have been related

³² See Senate Banking and Currency Hearings, Senate Document 232, pp. 1381-1383, also Macleod, *Theory and Practice of Banking*, p. 308.

³³ Federal Reserve Bulletin, Sept. 1921, pp. 1052-1053.

³⁴ For a full discussion of this subject, see H. Parker Willis, *The Federal Reserve System*, pp. 905-1032.

to a desire to increase the power of the Federal Reserve Board in its control of the interest rate. Yet the Board itself realized fully the value of a well developed market for short time commercial bills and the opportunity which that would give it to make its powers more effective. There was some effort to convince the Board that the powers bestowed upon it in section 14 of the Act were not intended to be exercised continuously but were, on the contrary, of an emergency character. To these proposals the Board replied in its first report to Congress. After defending the propriety of making sufficient earnings to pay its expenses and enable it to pay dividends to its stockholders it urged that it could not properly serve the purpose for which it was designed unless a substantial portion of its resources were continuously employed.³⁵

"There will be times when the great weight of their influence and resources should be exerted to secure a freer extension of credit and an easing of rates in order that the borrowing community shall be able to obtain accommodations at the lowest rates warranted by existing conditions and be adequately protected against exorbitant rates of interest. There will just as certainly, however, be other times when prudence and a proper regard for the common good will require that an opposite course should be pursued and accommodations curtailed. Normally, therefore, a considerable proportion of its resources should always be kept invested by a Reserve Bank in order that the release or withdrawal from active employment of its banking funds may always exercise a beneficial influence. This is merely saying that to influence the market a Reserve Bank must always be in the market, and in this sense Reserve Banks will be active banking concerns when once they have found their true position under the new banking conditions." It is quite certain that the board not only intended an active participation in the market but also that such participation should consist in the employment of a substantial portion of its resources in the discounting of bills founded upon sound

³⁵ First Annual Report, Federal Reserve Board, p. 18.

commercial transactions and the purchase of similar bills in the open market. These investments were to provide a succession of maturities so equably graduated that the banks could realize their policies without disturbing the market. That they did not contemplate the extended use of Government securities is implied in the situation. That they intended to depend upon commercial paper is expressed in their statements.

"The resources of a Reserve Bank, to be useful for its peculiar purposes, should always be readily available. It follows, therefore, that they should be mainly invested in such short term liquid investments as can easily be converted into cash as occasion may require. This conception of a Reserve Bank, moreover, implies that its investments should be marshalled in a steady succession of maturities, so that it may at all times as nearly as possible prove equal to the situation.

"The ready availability of its resources is of supreme importance in the conduct of a Reserve Bank. Only then can it become a safe and at the same time flexible instrument of guidance and control, a regulator of interest rates and conditions. Only then will it constantly carry the promise of being able to protect business against the harmful stimulus and consequences of ill-advised expansions of credit on the one hand, or against the menace of unnatural restrictions on the other, with exorbitant rates of interest and artificial stringencies. . . . It should never be lost to sight that the Reserve Banks are invested with much of the quality of a public trust."²⁷

From the very beginning the Board used its influence to encourage the use of the trade acceptance and its general substitution for the promissory note. It was very much impressed by the defects of the latter, chief of which possibly was its ineligibility for purchase in the open market. The Board wanted to see the widespread use of a commercial instrument which would find its way into the open short time investment market of the country and swelling the

²⁷ First Annual Report, Federal Reserve Board, 1914, p. 17.

supply of acceptable paper facilitate the effective employment of the resources of the Federal Reserve Banks and a more perfect realization of its powers. Unfortunately the country refused to be saved from its "pernicious" credit practices and the trade acceptance is to-day a negligible factor in the discount market as well as in the portfolios of the Federal Reserve Banks. Among the bills discounted by the Federal Reserve Banks for September, 1927, amounting to \$437,425,000 only \$1,852,000 were trade acceptances. Among bills purchased during this same period, amounting to \$249,836,000, only \$799,000 were trade acceptances and of the latter \$689,000 were based upon imports.²⁹ Such paper as has found its way into the discount market and has been used by the Federal Reserve Banks has consisted of bank acceptances based to a large extent upon the importation or exportation of goods. The volume of bank acceptances outstanding in the twelve Federal Reserve cities at the end of August 1927 amounted to \$782,055,029. Of these \$546,689,150 or more than two thirds were founded upon exports or imports.³⁰ It is in the nature of an anomaly that in a country where the foreign trade constitutes approximately five per cent of all its commerce, it should nevertheless furnish more than two thirds of all the paper in the discount market. These facts furnish the key to one of the major disappointments of the Federal Reserve System. We had visions of a market which would not only take care of the needs of the Federal Reserve Banks for proper assets and give the American exporter and importer an opportunity to finance his business on a dollar basis but also a market which would vie with London for a place in the commercial sun. In spite of the inestimable advantages which the fortuitous circumstance of war bestowed upon us, such as the practically exclusive maintenance of the gold standard, the prolonged departure of sterling from gold, the liquidation of our debt to Europe and an inversion of creditor relationship, unparalleled prosperity, the possession of one half of

²⁹ Federal Reserve Bulletin, Nov. 1927, p. 786.

³⁰ Bulletin of the American Acceptance Council, Sept., 1927.

the world's gold supply, the fact is, that we have fallen far short of our objectives. To a certain extent we have been able to settle our own transactions with other nations in terms of dollars. This has been a satisfaction. The development of our discount market has been so disappointing that the Governor of the Federal Reserve Bank of New York has been compelled to admit that the ability of the Federal Reserve Banks to control the market was dependent upon the existence of a huge quantity of short time government securities. Further evidence of a statistical nature may be offered as to the relative size of the two discount markets. We have already stated that the total number of bank acceptances in the twelve cities of the Federal Reserve System amounted to less than eight hundred million dollars. In 1873 Palgrave estimated the amount of bills in circulation, including foreign bills, in the London market at from 300 to 350 million pounds.⁴⁰ Sir Ernest Harvey making another estimate in August 1914 decided that there were 325,000,000 pounds outstanding. Writing in the *London Times* in the middle of 1923 he concludes that London has maintained this position.⁴¹ This means that the London market has approximately twice the volume of New York. The fact that it has remained approximately stationary for fifty years is significant. Our ambition need not be without prospect. It does call for patience.

Assuming that the discount market retains its present anemic stature, is it not possible to find a satisfactory substitute? While the much heralded star player has professed an indisposition which prevented him from playing the rôle assigned to him, we have been using an understudy in the form of a short term government security. He has done well and there is evident a disposition on the part of his employers, the Open Market Investment Committee of the Federal Reserve Banks, to retain him permanently. Why not? What are the intrinsic merits and defects of govern-

⁴⁰ *Bank Rate and the Money Market*, p. 66.

⁴¹ *Acceptance Bulletin*, July, 1923, p. 6.

ment securities as compared to bills of exchange when used for the purpose of regulating credit?

In the first place, a dependable supply of the paper must be constantly available in order to afford employment for the resources of the Federal Reserve Banks and permit them to remain in the market. The government security, being the child of the fiscal needs of the government, offers no assurance of sufficient permanence and volume. The difficulty of maintain an artificial supply we have already discussed.

In the second place, it might be said that the use of government security as the basis for the expansion and contraction of credit is repugnant to the canons of sound monetary science. We have heard much of elasticity as an essential quality in any monetary system. The virtue of elasticity was never associated with the fiscal requirements of a government. No student of money has urged that the quantity of currency should be expanded and contracted in accordance with the state of the budget. It is not to be denied that in actual practice this has occurred with lamentable frequency. Rather has it been urged that since the state of business is in a perpetual ebb and flow, and since the currency and credit necessary to provide for these normal fluctuations of business must, in order to prevent successive periods of scarcity and redundancy, themselves expand and contract with the needs of the community some machinery must be provided to make this possible. That our own Federal Reserve System provides this admirably requires no exposition here. It was believed that an increasing amount of business would create a larger number of instruments of credit, both certifying to and facilitating the increase. In other words, there would be an increasing amount of eligible paper presented by the member banks for rediscount and an increasing amount offered in the market for sale. The proper satisfaction of these wants would result in the necessary increase in the media of exchange. As these goods moved into the channels of consumption and were paid for

by the ultimate consumer the means of payment so offered found their way back to the Reserve Banks in discharge of the paper held. These media, credit and cash, were retired and the volume of the means of exchange resumed normalcy. Such is the ideal. But here we have a governor of a Federal Reserve Bank not only conceding that increases in the past have been based upon the obligations of the state but even going so far as to suggest that it would be well to have a government debt of the right kind and of the right size to serve as the basis for future expansions and contractions. It may well be that the government will sometime, under the pressure of impecuniosity, step up and offer its own obligations to pay in return for more negotiable certificates issued by the bank at a time when the bank may protest that it has no need for them. The state may then retort, "We have offered these instruments to you in the past to serve your own peculiar purposes. You accepted them. We are offering these to you now to serve our own peculiar purposes. You are going to accept." This is not a fairy story. It has happened.

In the third place, the investments of a bank should be of such a character that they may be marshalled "in a steady succession of maturities." The application of a central bank's power should be smooth and gradual and not abrupt. The government does not issue its securities with maturities designed to suit the convenience of the Federal Reserve Banks. Even with the most skillful manipulation by the Treasury, it is inevitable that the increments of indebtedness which mature at any one time have sufficient mass to disturb the market. It calls for the finest kind of co-ordination between the Treasury and the Federal Reserve Banks to prevent these maturities from causing serious inconveniences. Instead of being an aid in the execution of central bank policy, they are a distinct deterrent. A consideration of the maturity distribution of the investments of the twelve Federal Reserve Banks demonstrates this defect in the government security and the corresponding superiority of the discounted and purchased bills.

**MATURITY DISTRIBUTION OF BILLS, CERTIFICATES OF INDEBTEDNESS, AND
MUNICIPAL WARRANTS HELD BY THE FEDERAL RESERVE BANKS**

Bills Discounted	Total	Within 15 days	16 to 30 days	31 to 60 days	61 to 90 days	91 days to 6 mos.	Over 6 mos.
Oct. 5.....	462,485	389,385	21,277	30,246	17,960	3,007	160
12.....	430,249	361,063	19,158	28,740	17,835	3,267	186
19.....	417,597	344,124	20,926	29,579	18,728	4,035	205
26.....	402,398	330,843	17,524	31,467	17,276	5,044	244

**Bills Bought
in Open
Market**

Oct. 5.....	262,165	130,133	60,064	53,775	14,190	3,103
12.....	274,361	130,006	63,966	56,081	21,263	3,045
19.....	282,503	141,989	57,474	51,264	29,520	2,256
26.....	301,111	125,700	66,361	59,583	45,566	3,901

**Certificates
of
Indebtedness**

Oct. 5.....	122,277	1,593	.....	.....	.....	120,684
12.....	118,235	45	.....	.....	.....	118,190
19.....	120,608	1,845	.....	.....	.....	118,763
26.....	123,813	158	.....	.....	.....	123,655

**Municipal
Warrants**

Oct. 5.....	20	.....	20	.....	.....	.....
12.....	20	.....	20	.....	.....	.....
19.....	120	20	.....	.....	100	.....
26.....	120	20	.....	100	.....	.....

OTHER U. S. GOVERNMENT SECURITIES

Bonds

Oct. 5.....	255,972	Figures expressed in thousands of dollars and taken from the Fed- eral Reserve Bulletin, Nov. 1927, pp. 782 and 784.
12.....	258,780	
19.....	255,075	
26.....	261,876	

**Treasury
Notes**

Oct. 5.....	126,624
12.....	133,114
19.....	124,710
26.....	124,941

Bills discounted and bought in the open market offer an ideal current of maturities. Certificates of Indebtedness and municipal warrants are a poor second. Government bonds and Treasury notes have no liquidity at all on the basis of early and successive maturities. Their value as instruments of credit control must depend entirely on their ready saleability, a quality which they fortunately have to a high degree.

Bills discounted by member banks while possessing many of the qualities which make short term investments attractive to a central bank from the point of view of exercising control of the credit market have a conspicuous and disqualifying disadvantage. Their volume is dependent upon the initiative of the member banks and only to a slight extent can that be influenced by the Federal Reserve Banks. If a member bank has an adequate reserve there is very little which the Reserve Bank can do to compel that bank to come to it for additional accommodation. Normally an increase in the credit which member banks can extend to their clients is the result of an increase in reserves due to the sale of acceptable securities to the Federal Reserve Bank, to the discount of eligible paper or to outright borrowing.⁴² In any case the member bank must run the gauntlet of Federal Reserve Bank control. The Federal Reserve Bulletin for December 1926 ⁴³ calls attention to two methods of increasing member bank reserves which prevents any application of pressure. It is well known that the reserve required against time deposits is 3%, whereas those required against demand deposits range from 7 to 13 per cent. The composition of deposits of member banks has been undergoing change for the past four years. In 1922 time deposits constituted 31 per cent of the total. To-day they amount to 38 per cent. For the year 1926 total deposits in member banks increased about \$625,000,000 which represented an increase of \$775,000,000 in time deposits and a decrease of \$150,000,000 in

* Actually cause and effect are reversed, i.e., the increase in bank credit comes first and is the cause of an increase in reserves.

⁴³ Pp. 823-825.

demand deposits. This change in the character of their own deposits enabled member banks to economize their reserves⁴⁴ to the extent of \$200,000,000. A given reserve base will therefore support a far greater credit superstructure without invoking the intervention of the Federal Reserve Banks as far as that intervention may take the form of direct pressure upon the banks.

Another situation under which the member banks might ignore the paternal guidance of the Federal Reserve Banks is the consequence of an inflow of gold. This is deposited in the first instance with the member banks since the Federal Reserve Banks do not accept the deposits of private individuals and when deposited by these banks it adds just that much to their reserves. A sole dependence upon the direct relations with member banks would leave much to be desired in the way of effective central bank control.

In this consideration of the qualifications of the various types of paper in which a Federal Reserve Bank may deal it must not be forgotten that short term government securities do have distinct attractions to the Central Banker. Under present conditions they have the virtue of safety to a degree possessed by no other paper. In the second place, they have so far been available in relatively profuse abundance. Finally, their facility of sale, of unconditioned negotiability and of collection is unsurpassed.

What are the prospects of substitutes adequate in the light of the requirements of the Federal Reserve System? This involves an examination of the quantity of bankers acceptances available in the American market, the extent to which the Federal Reserve banks have absorbed the available supply and the amount that would be necessary in order to insure a reasonably effective control of the market.

Thanks to the excellent work of the American Acceptance Council, we can furnish the evidence called for by the first point, namely, the volume of acceptances in the American market. This volume was measured on the 1st of April in 1920 and at the same time in the succeeding four years. Be-

⁴⁴ *Idem.*

ginning with 1925 we have the figures at the end of each month.

	1920	1921	1922	1923
April 1st	799,001,237	644,092,113	416,422,118	523,707,971
	1924	1925	1926	1927
J.		834,824,681	788,253,933	773,604,424
F.		808,359,126	767,127,116	785,487,908
M.		800,137,196	745,659,632	809,445,721
A.	617,580,562	757,073,786	720,611,138	810,965,525
M.		680,345,502	685,333,098	774,719,885
J.		607,941,566	621,948,949	751,270,173
J.		569,386,316	600,486,807	741,258,404
A.		555,166,837	582,634,951	782,055,029
S.		607,025,151	614,151,287	864,000,000 ^{aa}
O.		674,167,813	681,647,409	975,000,000
N.		689,767,871	726,394,811	1,029,000,000
D.	821,417,799	773,735,592	755,360,281	1,081,000,000

Taking the month of April as a typical month we find a decline from 1920 to 1922 which in view of the world-wide depression prevailing during this period is to be expected. From then on the rise is steady with only a slight relapse in 1926. The months of May, June, July and August bear similar testimony. This is rather scant evidence on which to base any predictions and none will be attempted. We may say that it suggests the possibility that some time in the future we may have a discount market of sufficient proportions to liberate the Federal Reserve Banks from their present dependence upon Government issues.

What portion of this supply of bankers acceptances have the Federal Reserve Banks absorbed? The following table shows the average daily holdings of the twelve banks. The figures represent the bills bought in the open market from member banks and dealers and also such bills as have been purchased by the banks from each other. The war years naturally show a heavy increase in these holdings due not only to the higher level of prices but also to the stimulus which the conflict gave to business and also to the fact that the Federal Reserve Board substantially relaxed its regulations governing the eligibility of bankers' acceptances

^{aa} Federal Reserve Bulletin, June, 1928, p. 383.

whereby bills that were in effect renewable finance bills were assured access to the credit reservoirs of the Federal Reserve Banks.⁴⁵ A syndicate of New York banks had agreed in advance to finance the purchase of supplies in this country by the French authorities. The amount involved was \$50,000,000 and the period of the credit two years. The problem of the members of this syndicate was to advance this credit and at the same time preserve the ostensible liquidity of their portfolios. This could be accomplished best by the use of acceptances. One member of the group would accept a bill drawn on it by the French government, a bill which would then be purchased by another member of the syndicate. The acts of acceptance and purchase could be reversed on the next bill so that each bank had in its portfolio bills which were technically compliant with all the requirements for good paper. Of course these bills were only garmented in the spurious externals of a real bill. The munitions which the proceeds purchased "approached the channels of consumption" by being expended on an unappreciative enemy who would repay in kind. The latter proceeds could scarcely be used to liquidate these bills on maturity and they were consequently renewed. Were these bills eligible for rediscount at the Federal Reserve Banks? Comptroller Williams and Secretary McAdoo sensing an opportunity to facilitate the highly lucrative manufacture of munitions in this country were able to forget with astonishing ease their previous insistence upon the need for a strict regulation of this type of paper and urged the eligibility of the French finance bills to rediscount. The French finance bills therewith became eligible for rediscount and the resources of our newly established banking system were placed at the disposal of European belligerents. This little incident is eloquent of the ease with which a politician's fidelity to principles will yield to the allurements of ephemeral expedi-

⁴⁵ The original intention was to have bankers' acceptances used only for the purpose of financing goods in transit and the regulations of the board called for documentary evidence to sustain the essential self-liquidating character of this paper. See Circular No. 13, Federal Reserve Board, Nov. 10, 1914.

ency.⁴⁶ Let the advantages of the hour suffice thereunto.⁴⁷

The growth during the war years must therefore be regarded as slightly tainted with unsoundness and the accumulation of relatively large quantities of bankers acceptances by the Federal Reserve Banks as due to the pressure of political opportunism.

AVERAGE DAILY HOLDINGS OF BILLS BOUGHT IN OPEN MARKET BY 12 FEDERAL RESERVE BANKS (000 OMITTED)

	1916	1917	1918	1919	1920	
J.	26,155	111,575	265,590	280,732	575,667	
F.	28,251	117,865	289,072	276,087	546,458	
M.	35,292	99,026	318,778	262,787	481,238	
A.	44,150	78,812	311,984	208,905	419,746	
M.	51,155	99,517	278,464	189,768	416,520	
J.	63,403	164,355	238,507	246,158	401,184	
J.	80,264	198,703	209,174	362,298	363,621	
A.	82,391	162,262	217,109	371,091	325,461	
S.	82,807	167,403	249,751	353,936	313,864	
O.	82,601	178,680	360,451	340,189	303,981	
N.	96,493	195,635	378,036	455,057	278,521	
D.	122,315	250,438	344,329	549,959	244,001	
	1921	1922	1923	1924	1925	1926
J.	200,913	98,742	220,733	302,509	328,644	327,179
F.	173,082	87,398	186,648	271,408	313,847	305,631
M.	138,397	92,965	232,486	229,650	298,113	269,634
A.	110,372	93,086	274,533	173,666	288,989	235,956
M.	84,395	103,072	271,263	80,814	277,523	230,555
J.	54,716	135,181	225,396	51,125	264,589	244,038
J.	26,395	154,010	185,807	44,132	232,734	231,132
A.	38,124	159,020	176,950	28,371	205,605	245,094
S.	40,020	209,793	173,619	89,777	224,135	263,992
O.	56,196	251,618	283,671	177,949	295,549	294,296
N.	78,867	259,980	262,304	265,926	252,229	246,859
D.	105,499	261,077	322,431	356,613	367,864	384,826 *

Adequate analysis of the composition of paper purchased by the Federal Reserve Banks prior to 1927 is not available and it would therefore be difficult to determine what portion of the investments of this character served to finance foreign trade and what portion was based upon domestic

* Regulation R, Series of 1915, Federal Reserve Bulletin, Oct. 1915, p. 310.

"For a full discussion of the controversy between a strict and liberal construction of eligibility, see H. Parker Willis, *Federal Reserve System in Operation*, pp. 983-997.

* Annual Report Federal Reserve Board, 1926, p. 60.

transactions. The following figures show the holdings of bills based upon domestic transactions at the end of each year since and including 1922. They can be compared with the last figure in the corresponding year columns above. 000 omitted.

1922	1923	1924	1925	1926
65,328	90,965	94,556	63,911	77,698

On the average therefore less than one quarter of the holdings of the Federal Reserve Banks have been employed for financing internal trade. That this is a fair picture of the relatively unimportant contribution which domestic trade makes to the discount market is supported by the monthly reports made to the American Acceptance Council and published in the monthly periodical of that organization to which reference has already been made. Acceptances outstanding during a recent twelve months period, based upon imports and exports, are as follows:

	<i>Imports</i>	<i>Exports</i>	<i>Domestic</i>
1926			
S.	272,181,060	194,700,776	14,403,861
O.	276,779,188	235,237,594	20,143,797
N.	280,891,533	259,927,451	20,261,469
D.	283,586,610	260,713,277	28,685,611
1927			
J.	293,058,191	272,492,924	32,621,026
F.	302,362,090	275,230,152	24,903,676
M.	320,322,187	285,402,147	17,926,369
A.	308,602,529	285,013,032	21,160,733
M.	298,885,708	271,346,803	16,134,053
J.	293,902,299	261,412,053	19,233,513
J.	292,923,449	249,905,485	16,560,630
A.	286,031,956	260,657,194	16,325,298

It will be seen that these figures do not total the amounts given as outstanding at the end of each month on page 13. The difference between the sum of the three items here given and the totals is made up of drafts drawn against goods in domestic warehouses, to provide dollar exchange

• Annual Reports of the Federal Reserve Board.

and to finance the shipment of goods from one foreign country to another. The figures demonstrate the predominant part played by our own exports and imports in providing the substance of our discount market.

As New York develops breadth and vigor as a discount market, we may look forward to the day when it will stand as a serious contender with London for a position of pre-eminence. Among the factors which will play a vital part in this competition are the tariff policy of the United States and of the principal nations with whom we trade. Since the paper which enters the New York discount market is founded so largely upon foreign trade, we may assume that an expansion of this trade will bring with it an increase in export and import bills. There is obviously a direct relation between international commercial policies and bills of trade. Furthermore, the stability and level of discount rates in the two centers will determine the locus of acceptance and the means of payment adopted by two traders, neither one of whom is a subject of the United States or the British Empire. That is to say that it will be to the advantage of both the buyer and seller to arrange for settlement in that center where the rate is lower and payment more economical. To illustrate this we may assume that an Argentinian dealer in wool has sold a lot of this material to a jobber in Paris and has drawn a draft payable ninety days after sight for the amount of the bill. The importer in Paris has signified his willingness to provide acceptance for the bill in New York or London. The woolen exporter of South America cannot afford to await the expiration of the credit period and must sell the bill at once. If he arranges to have it sold in New York it will be discounted at the rate of $3\frac{1}{2}\%$. The rate in London is $4\frac{1}{2}\%$. Other things being equal his proceeds in New York will be greater than in London and he will, insofar as the choice rests with him, draw on a New York institution. In fact he can afford to shade the price a bit for the Paris jobber so that both exporter and importer profit by this resort to the center of cheaper funds. To the extent that drafts are drawn in dollars for the settlement of

transactions between the nationals of two other countries the dollar partakes of the character of an international currency. The same applies to sterling. If lower interest rates lead to an increasing volume of dollar credits in the marts of international trade, they will in terms of other currency tend to decline in price. In other words, such a discrimination in favor of the dollar as a means of payment will bring about a tendency for sterling and other monetary units to rise. It would have the further effect of stimulating our own exports and retarding our imports. All these influences plus the possibility of actual shipments of gold would tend to absorb the surplus of credit in New York and increase the supply in London until equilibrium is reestablished. These temporary fluctuations will therefore affect the supply of bills from time to time but will in turn set in motion forces which will tend automatically to efface differences in interest rates between New York and London and establish a free flow of credit between the two centers.

We have been pressing our analysis of the bankers' bill so far on the assumption that it had certain advantages for purposes of control which neither the discounted bill nor the government security possessed. The orthodox description of the money market pictures the central bank as selling bills from its portfolio when credit is excessive and buying bills when there is apparent necessity for increasing the available supply of credit. The student receives the impression that these bills are largely commercial bills. This is, unhappily, an illusion. Attention has previously been called to the practice of other central banks in using government issues for the purpose of enforcing their discount rates. As a matter of fact, in the development of open market policy by the Federal Reserve Banks the use of bankers' bills as instruments of credit control is largely an academic fiction. This error of interpretation may have been due to an examination of the law rather than the practice of Federal Reserve Banks. Section 14 of the Federal Reserve Act states, among other things, that:

"Any Federal reserve bank may, under rules and regulations prescribed by the Federal Reserve Board, purchase and sell in the open market, at home or abroad, either from or to domestic or foreign banks, firms, corporations, or individuals, cable transfers and bankers' acceptances and bills of exchange of the kinds and maturities by this Act made eligible for rediscount, with or without the indorsement of a member bank."

This leaves no doubt as to the power of the Federal Reserve Banks to sell bankers' acceptances if they so choose. Governor Strong, as Chairman of the Open Market Investment Committee, stated that prospective inflation was discouraged by the sale of government securities rather than bankers' bills. From the middle of 1922 to the middle of 1923, while the reserve banks were reducing their government securities from \$629,000,000 to \$73,000,000⁵⁰ in order to discourage what appeared to be an unsound development, there was no corresponding disposition of commercial bills which had been purchased in the open market. In June 1922 the Reserve Banks held \$135,181,000 of these bills. By the end of the year the latter had increased to \$261,077,000.⁵¹ There is no apparent relation between open market policy as evidenced by the sale of government issues and their holdings of bankers' bills. That the latter are never sold except under repurchase agreements is frankly stated by the Board in its annual Report of 1925.⁵² One reason for not selling these bills is the brevity of their tenor. Another and far weightier reason for abstaining from their sale is the meticulous solicitude with which the growth of this valuable commercial and banking organism is regarded. If a central bank should at any moment for reasons of policy undertake to dump substantial quantities of trade bills on the market, it would have an injurious effect on the price of bills. The dealers whose assets have been shrunk in the interest of monetary policy may prove entirely unappreciative. In fact their enthusiasm for a business, subject to the

⁵⁰ Stabilisation Hearings, Vol. I, p. 330.

⁵¹ See pages 278 and 279 for source of figures and more complete table.

⁵² See Annual Report of Federal Reserve Board, 1925, pp. 7-10.

unpredictable interventions of a social-minded government may conceivably wane. Such action on the part of the banks would have a distinctly depressing and discouraging effect on the growth of an open market. No comparable difficulty is involved in the sale of government securities. A constant willingness on the part of a central bank to purchase acceptances offered at a price that can be depended upon is a *sine qua none* of a well established discount market.⁵³ Therefore, as far as initiative is concerned, bankers' acceptances stand in the same position as the discounts of member banks. Their volume depends upon the member banks and the dealers.⁵⁴

"It is, furthermore, the practice of the reserve banks never to sell purchased acceptances, but to carry them, like rediscounted paper, to maturity. This is in contrast to purchases and sales of United States securities, which are undertaken at the initiative of the reserve banks in the light of the general credit situation at a rate fixed in the market."⁵⁵

Therefore, if the power to participate in the open market is to be effective in enabling the central bank to realize such immediate and technical objectives as the compensation of gold movements, quarterly day adjustments, the attraction or discouragement of international commercial financing, the removal of undesirable items from member bank statements, or the larger general aims of price control and business stabilization, it must hope for an ample supply of government paper. Only this is available in sufficient quantities and free from a susceptibility to the effects of sale and purchase by the central bank to the extent necessary to attain its ends. The lack of volume of commercial bills and the practical inability of the Federal Reserve Banks to freely dispose of them precludes their use in any scheme for effectuating the open market powers of these banks. All plans which suggest the use of these powers for the larger purpose of stabilization omit a vital element unless they

⁵³ Governor Strong, Hearings, p. 314.

⁵⁴ Annual Report Federal Reserve Board, 1926, p. 7.

⁵⁵ *Idem*.

likewise suggest some way in which the central bank can be assured a continuous supply of short term government securities and also relieve the central bank of the jeopardy in which such a dependence upon the government would place the bank's freedom of action. Doubtless in the absence of an adequate supply of short term government securities, the long time obligations of the government may be pressed into service. From the point of view of the central banker, such issues are but a poor substitute for the paper of short tenor. The more remote maturity date of the bonds adds an uncertain element to the price. The rate of interest on bonds must be fixed at the time they are marketed, and cannot be altered to conform to changes in the conditions which influence the interest rate. The price of the bond itself acts as the buffer which absorbs the effect of changes in the rate, although the nominal rate of the bond remains unchanged. Thus the central bank has to contend with discounts and premiums on its investments and it feels that an element of speculation or chance has been introduced into its operations which it has no right or at least no business to embrace. Furthermore, the purchase or sale of a half billion bonds within a short space of time is bound to have an effect on the price of such issues far greater than would be the case with the disposal of a similar amount of short term obligations, the full payment of which is assured within the course of a few months. It is proper to express a doubt at this point whether the government of the United States would view with complacency the dumping of a large amount of its obligations on the market in an effort by the central bank to check a boom. The very circumstances which would require such action would predispose the market to discount the bonds. A period of business expansion, wholesome or otherwise, is usually a period of excellent investment opportunities. It is a time when business men feel they can invest funds with reasonable assurance that they will realize profitable returns. That interest rates tend to rise in such a period is well known. The rise of the general market rate will of itself have a depressing effect on the prices of

all bonds and the appearance of a large amount of government issues offered for the purpose of removing the very funds for which business men are competing will only aggravate the decline. Again it must be pointed out that such a situation will effect a bond with a given rate much more than it would effect a treasury certificate with the same rate. The par value of the latter will be paid within 60 or 90 days. The temper of the market, the state of business and the general interest rate and demand for funds will have no effect on the price at which the Treasury will redeem its certificates. This is not true of the bond due at some more or less remote point in the future. True they can always be sold but there is no similar certainty as to the price. We may say, therefore, that the treasury certificate of indebtedness or the treasury note has the following advantages over the government bond.

1. There is a better market for it due to earlier maturity.⁶⁶
2. The price is more stable and less susceptible to market conditions.
3. Greater quantities can be bought and sold without affecting the price.

Summarizing our discussion up to this point, we may say that the open market operations of the Federal Reserve Banks are carried on under greater restrictions and less latitude than is generally supposed, that within the limitations developed these banks are nevertheless able to realize certain important, temporary technical objectives, that the ability to achieve the larger general ends of price control and business stabilization depends upon a freedom of conduct and the continued existence of a supply of appropriate paper for which the prospects at present appear doubtful.

However, the advocates of the use of this power to stab-

⁶⁶ Gov. Strong in replying to a question concerning the value of long-term government bonds as a substitute for Treasury certificate says: "Long-time bonds would not serve our purpose as these do. You can not sell hundreds of millions of them and buy hundreds of millions of them with the facility that you can a Treasury certificate that matures at three or six months. I should regret very much to see the volume reduced very much below what it is now." P. 450. *Hearings on Stabilization. H. R. 7806*,

ilize prices maintain that the ability to attain the end sought is no longer an academic question but has already been demonstrated beyond reasonable doubt. Of this mind is Professor John R. Commons.⁵⁷

He criticizes the failure of the Federal Reserve Board to advance its rediscount rate soon enough and far enough in 1919 and blames that failure for the catastrophic collapse of 1920.

"Had the board adopted in April, 1919, the resolution which it adopted in April, 1923, and had it and the reserve banks applied the resolution to the rediscount rates as well as to the open-market operations, then the extreme inflation and collapse of world credit in 1919-1920 would not have occurred, or would have been far less extreme. When the thing was once under way, then only the most drastic remedies could be invoked, and the sale of securities and final excessive advance of the rediscount rates, forced upon the banks by the danger line of the gold reserve in 1920, was the penalty of *not* governing themselves soon enough with 'primary regard,' as they now say, to the 'general credit situation.'"⁵⁸

He imputes to the Federal Reserve Board a suggestion of almost magic power in the stabilization of prices. Speaking of the importation of gold after the war and the general expectation that this would result in a higher price level in this country in accordance with orthodox influence theory, he says,

"Here it was revealed, to the astonishment of many, that the enormous gold reserves and gold imports of the country, while all other countries were on a paper money basis, nevertheless need not have the effect of raising gold prices in this country. As a matter of fact, it might almost truly be said that, since that date of April, 1923, we have not been actually on a gold basis, but have impounded our gold beyond the use of the banking system, and have stabilized prices at something much lower than the gold level. And this was done with just a slight and delicate touch on the two great levers in the hands of the reserve board and banks, the lever of the rediscount rates and the lever of the open-market investments."⁵⁹

⁵⁷ See *The Stabilization of Prices and Business*, The American Economic Review, March, 1925.

⁵⁸ *Ibid.*, p. 46.

⁵⁹ *Ibid.*, p. 48.

Certainly to J. M. Keynes the latter statement must appear as divinely inspired truth. The "delicate touch" suggests the precision of management and the neutralization of gold the nominality of the gold standard.

Along lines similar to those developed by Foster and Catchings,⁶⁰ he speaks of the "admirable feat" of 1923 whereby the Federal Reserve Banks arrested a dangerous boom by selling largely of its holdings of government securities.

"I think the Federal Reserve Board and the reserve banks must have been astonished at the ease with which the stabilization of the credit situation was effected. If anything, they overdid it, and the business activity of the ensuing period has not been as lively, nor the price of products as steadily maintained, as one could have wished who hoped for a stabilization of the price level. The decline, in fact, became rather serious in the first half of 1924, but since that time three reductions in the rediscount rates have been made at New York, and lesser reductions elsewhere, so that, along with open market investment purchases and other circumstances, a considerable enlargement of business and a rise, especially in farmers' prices, has occurred."⁶¹

The farmers of the country are perhaps to this day entirely unaware and unappreciative of the beneficent influence exercised on this occasion by the Federal Reserve Banks. They are doubtless nourishing strange illusions to the effect that the rise in the price of farm products was attributable to world conditions of supply and demand rather than the credit policy of the Federal Reserve Banks. Let us examine this gratuitous imputation of effective price influences in the light of world production statistics rather than that of qualitative postulates of credit control. In 1923 the total production of wheat of the seven principal wheat producing countries of the world was 2,384,845,000 bushels. Of this total the United States furnished 797,381,000 bushels. In 1924 during which the "delicate touch" was so much in evidence, the world produced 2,158,453,000 bushels of wheat

⁶⁰ See *Business Conditions and Currency Control*, Harvard Business Review, April, 1924, pp. 268-281.

⁶¹ *The Stabilisation of Prices and Business*, op. cit., p. 48.

and the contribution of the United States to this total was 862,627,000 bushels.⁶² Our two chief export grains are rye and wheat, grains whose prices are determined in a world market. In 1923 the average price of rye No. 2 in the United States was \$.752; in 1924 \$.916. The price of No. 2 red winter wheat at Chicago in 1923⁶³ was \$1.17; in 1924 it was \$1.28. Thus on a larger crop the farmer was able to realize a better price and we confess an inability to discern a clear direct relation between this increased income of the farmer and the credit policy of the Federal Reserve Board.

Let us see if the Board in its official publication assumes the credit for the happy state of the country and especially of agriculture which some of its friends so generously concede. On page 71 of the Federal Reserve Bulletin for February 1925, it states that the recovery of prices during the latter part of 1924 was "largely the result of increases in prices of agricultural products." Between June and December of 1924 the prices of agricultural products at wholesale advanced on the average about 15% while non-agricultural prices advanced on the average only about 2%. "A considerable reduction in the world's grain crop and an increase in foreign buying resulted in an advance of grain prices during the last six months of 1924 to a point about 47% above the midsummer level." In September the exports of wheat from the United States were double those of the same month in the preceding year and in October they were five times those of 1923.⁶⁴ To a large extent this revival in the United States is attributed by the Board to the increased buying of agricultural products in the United States by foreign countries made necessary by a shorter world crop and facilitated by the easy money rates prevailing in this country. Insofar as the latter condition is one of the effects of the conscious policy of the Federal Reserve Board, the latter may properly be assigned credit. Precisely how much this should be cannot be determined. Perhaps it is

⁶² Statistical Abstract, 1925, p. 675.

⁶³ *Ibid.*, p. 314.

⁶⁴ Federal Reserve Bulletin, February, 1925, p. 73.

fair to say that in the presence of felicitous concomitant circumstances, the deliberate objectives of open market policy were successfully attained. It is also not unfair to suggest that these other conditions to which attention has been called were such important factors that business recovery might have taken place without the purposeful intervention of the Federal Reserve Banks. At any rate, the Federal Reserve Board in its monthly periodical missed its cue.

Professor Commons also discloses a misapprehension of the function of open market investments by the Federal Reserve Banks which is quite prevalent.

"The Federal Reserve Board and reserve banks, in order to accomplish their purpose, must have an influence not only on the price of credit through rediscounting, but also on the supply of credit through direct open-market operations with the public. Sometimes the stabilizing influence of the Board is accomplished by regulating the price of credit which may then indirectly affect the supply and demand; sometimes by regulating the supply of credit, which may, in turn, affect the price and demand; and all of this implies knowledge and forecasting of the way in which supply and price are related to the demand for credit under the changing circumstances of time and place. Instead, therefore, of weakening the Board's regulation of supply of credit, the public interest, as against the supposed private interest of bankers, would indicate that the open-market operations of the reserve banks should be enlarged rather than diminished."⁶⁵

This betrays a misconception of the effect of open-market operations. It cannot be the intention of the Federal Reserve Board to control directly the supply of credit since the provisions of the statute under which the Board exists provide that it must discount all eligible paper offered by member banks and lend to member banks whenever they comply with the conditions laid down in the law. The exercise of free discretion as to *quantity* is practically denied to the Board.⁶⁶ It cannot ration the supply of credit

⁶⁵ American Economic Review, March, 1926, p. 50.

⁶⁶ It is not intended that this statement should be taken with absolute literalness. It means rather that in the normal discounting and open market functions of the Federal Reserve Banks they exercise practically no direct control over the supply of credit *excepting only* in so far as the discount

which member banks seek when they come properly accredited. It can affect the supply only through a change in the interest rate and the open market operations permit

rate itself serves to reduce the volume of that credit. The power to discount eligible paper is optional and not mandatory and the Federal Reserve Board has on at least two occasions stated unequivocally that technical eligibility does not automatically compel a reserve bank to discount. In a ruling given in the December Bulletin, 1920, p. 1303, the Board declares "It should be understood, . . . , that even though a bill or note may technically be eligible for rediscount, a Federal Reserve Bank is under no obligation to rediscount it, but may accept or refuse it in the exercise of its discretionary power."

In the Bulletin of September, 1923, p. 1003, this ruling is reiterated in identical language.

Section 4 of the Act furnishes the banks with a rough guide for the disposition of their assistance since it states that credit can be granted where that may be done "safely and reasonably" and "with due regard for the claims and demands of other member banks." The Federal Reserve System is a co-operative enterprise and its ability to assist individual members is due to the contributions which the constituent members have made. It is only fair, therefore, that a member bank should not consistently seek more support than its own proportionate contribution warrants. Each member bank has a basic line which indicates the amount of credit to which it is entitled and it is understood that this should be used only for temporary or seasonal requirements. It was never intended to be kept expanded to the full limit throughout the year. The Federal Reserve Banks have permitted the member banks great latitude and individual banks have been able to exceed their basic line from time to time when in the judgment of the Federal Reserve Banks this excess was warranted and safe and was not used for unwise expansion or as a source of working capital for the bank. The basic line is a function of the contribution which the member bank has made to the common fund. It is equal to the paid up subscription to the reserve bank's capital stock plus 65% of the average reserve balance with the Federal Reserve Bank multiplied by 2.5. See Appendix Chap. XXIV.

The Board has repeatedly admitted that it has no way of determining the purpose to which the proceeds of a loan to a member bank are to be devoted. (See Federal Reserve Board, Annual Report, 1923, p. 35). This inability to discover the precise incidence of a given issue of credit seriously impedes the exercise of any selective discrimination on the part of the Federal Reserve Banks. They have rough volume controls in the requirements for eligibility and the elastic limitations of the basic line.

There is one other way in which they have been able to make some strides in the restriction of the volume of credit. During and after the war a large number of member banks became chronic borrowers, an entirely attractive procedure since they could borrow at a relatively low rate and lend a substantial multiple of the loan at higher rates which may not be sound banking but is certainly, in a narrow sense, good business. During the last three or four years the Federal Reserve Banks have been working with these continuous borrowers with good effect. Chronic borrowing is contrary to the spirit of the act and may in an emergency when other member banks are reaching out for the assistance which they have the right to expect of the Federal Reserve Bank at such a time prevent those banks from realizing the same measure of self-salvation. Not only were there banks which borrowed continuously but there were many which

the reserve banks, if their assets are adequate, to enforce the rediscount rate and to compel the banks to come to them. The notion that the supply is directly affected is entirely erroneous. This is not only the statement of the chairman of the Open Market Investment Committee of the Federal Reserve Banks but also the verdict of the facts.⁶⁷ That the supply of credit was affected is based upon the following facts. In January of 1923 the government securities held by the reserve banks amounted to 734 millions. Since an inflationary movement was in prospect in the early part of 1923, the Federal Reserve Banks sold heavily of these securities and had reduced the total holdings to less than 300 million by July. Now the argument of the "delicate touch" protagonists is that as these securities were sold the Federal Reserve Banks received checks of member banks which checks were charged to the reserve account of these member banks reducing their reserves, compelling them to curtail their advances and thus affecting the "supply" of credit. This supply is evidently dependent upon the reserves of the member banks. Let us see if these reserves show an evidence of the drastic assaults of open market sales. The following shows the reserve deposits of member banks for 1923:

J.	1,913,465	M.	1,899,810	S.	1,839,142
F.	1,887,552	J.	1,851,938	O.	1,895,265
M.	1,862,676	J.	1,878,367	N.	1,804,794
A.	1,864,756	A.	1,844,718	D.	1,896,315 ^a

borrowed for months at a time in excess of their own capital and surplus, a fact of particular significance in view of the limitation imposed on national banks prior to the establishment of the Federal Reserve System against incurring debts in excess of their own capital resources. The campaign has resulted in a reduction of such borrowing.

"During 1924 about 15 per cent of the total volume of member bank borrowing at the reserve banks represented indebtedness continuously for a month or more in excess of the borrowing bank's capital and surplus, while during 1926 this proportion was 5 per cent." Annual Report, 1926, p. 8.

These various restraints while interesting and not without importance are applicable chiefly on the margins where abuses are likely to occur and do not affect the large body of legitimate applications for credit. Within these margins there is a vast expanse of freedom for the member banks and in practice little direct restraint has been exercised upon the volume of credit.

^a Stabilization Hearings, H. R. 7895, pp. 330-331.

^b These figures fail to justify the belief that the base upon which the credit extended by banks rests has been affected by open market sales.

That the open market operations of the Federal Reserve Banks affect the volume and cost of bank credit in the United States is an opinion that is widely held not only in this country but also abroad. An echo of this tenaciously intrenched sentiment appears in an article on "The Problem of Gold Values," published by the Midland Bank, Limited, London, in its *Monthly Review*.

"The weapons in the hands of the central bank authorities in the exercise of credit control are discount rates and open market policy. Both of these act upon the volume of bank cash, which again, within limits, determines the volume of credit. The effect of a change in the discount rates is indirect, for the initiative in discounting a bill rests with the customer, and all the central bank can do in this direction is to deter its customers from presenting bills or encourage them to do so, as the case may be. Open market policy, however, proceeds on the initiative of the central bank, which increases or decreases its earning assets, not by inducing the other banks to present bills or refrain from doing so, but by buying and selling investments, acceptances or other suitable securities, from or to any willing party. The latter of the two weapons, therefore, is clearly far more powerful, for not only can it be used independently of the bank rate, but it can completely neutralize, and more than neutralize if need be, the effects of a change in the rate of discount. . . .

"A study of the figures of the Reserve Banks over the past few years shows clearly how open market policy has been used to regulate the volume of bank cash, so far as it consists of balances of member banks with the reserve banks."⁶⁹ . . .

"We see then that a high degree of relief from cyclical and long-term movements in the price level is not only obtainable, but has actually been secured in the United States, through central bank action upon the cash reserves of the other banks, and through them on the volume of credit."⁷⁰

This is in substantial agreement with the interpretation of open market operations given by Foster⁷¹ and Com-

⁶⁹ Note table on preceding page.

⁷⁰ July-August, pp. 2-3.

⁷¹ *Business Conditions and Currency Control*, Harvard Business Review, April, 1924, pp. 268-281.

mons.⁷² In this construction, much is taken for granted and many links in the chain of causation are inserted gratuitously since an examination of the facts will prove this to have been unwarranted. It will be necessary to take this orthodox and widely held view and restate it in detail. Our first factor is the entrance of the central bank into the investment market. The final factor is the stimulation or retardation of prices and business whichever happens to be the purpose of the central bank.

Premise—Business is expanding and prices rising at a rate which is causing alarm and induces the central bank to bring its open market battery into action.

1. It sells such a supply of the securities which it has in its portfolio as it deems necessary.
2. These securities are purchased by the public and paid for with checks drawn on banks that are members of the Federal Reserve System and consequently have accounts with the Federal Reserve Bank which has sold its obligations to the public. These accounts constitute the reserves of the member banks against whom the checks received by the Federal Reserve Bank are drawn.
3. The Federal Reserve Bank reduces (charges) the accounts of the member banks whose checks it has received by the amount of the checks.
4. This curtails the lending power of the member banks not by the amount of the checks charged against their reserves but by an amount for the system approximately fourteen times as great. This is due to the fact that a member bank, on the average, has loans and investments about fourteen times as great as its reserves. A one million dollar reduction in reserves, therefore, means a fourteen million dollar reduction in loans and investments.
5. The member banks, *finding their reserves diminished, must* in turn diminish their own obligations. *This they accomplish by refusing applications for renewal and new loans made by their own clients and also by raising the interest rate charged to such customers whose requirements are sufficiently urgent to compel them to borrow at the higher rate.*

⁷² *The Stabilization of Prices and Business, The American Economic Review*, March, 1925.

6. Since the banks have reduced their loans and investments, the clients of these banks, the merchants and producers of the country, have a smaller volume of credit at their command with which to make purchases or expand their productive operations.
7. Since there will be less money and credit available for business expansion, the unsound growth which caused the initial alarm will be checked.
8. Since there will be less money and credit available for making purchases the prices of the goods and services which would have been bought if the credit had been available will drop. If the demand for commodities and services declines the prices of these commodities must decline. Therefore the dangerous rise in the price level, the symptom and substance of inflation, has been checked.

Conclusion:

The sale of securities by the central bank has checked an unsound growth of business and a dangerous rise in prices.
Quod erat demonstratum.

As an exercise in elementary logic this is beautiful in its simplicity. Any grammar school boy who can prove a primary theorem in geometry can understand exactly how open market operations can be used to control business and the price level. If economic phenomena yielded to such epigrammatic exposition the task of the economist and, by far more important, that of the central banker would be one of incredible ease. Unfortunately, this is not the case, as we shall discover upon scrutinizing the apparent impregnability of the above chain of logic.

In the first place, the central bank is not entirely free in the purchase and sale of securities in the open market. As a matter of policy (which we have examined at some length elsewhere) the central bank rarely sells commercial bills which it has previously bought. Its initiative is exercised only with respect to the purchase and sale of government securities. This imposes not only a qualitative restriction but also one of quantity. Its ability to buy and sell effectively is dependent upon the supply of the proper kind

of securities. The fiscal policy of the Treasury is not guided by the manipulative requirements of the central bank. On the other side, there is the limitation of self-support. The central bank may from time to time part with its earning assets to the extent of impairing its own income needed to meet expenses. It would be imprudent to invoke its surplus for this purpose for any length of time, to suspend the payment of dividends or to become dependent upon the government.⁷³

With the second link we have no quarrel.

While the checks received in payment for the securities sold by the central bank are charged to the accounts of the respective member banks, this does not result in a diminution of the reserves of such banks. It would if the member banks had no other means at hand with which to replenish their reserves. The right of rediscount offers an easy and, provided the bank has not previously abused the privilege, ever ready solution.

The strength of the open market weapon of the Federal Reserve Banks was never fully "appreciated" until the formation of the Open Market Investment Committee of the Federal Reserve Banks in the early part of 1923. Since then this "appreciation" has flowed forth in a multifarious and highly eulogistic stream from many sources on both sides of the Atlantic. It has not come from the above mentioned committee. In the latter half of 1922 and the first seven months of 1923, this committee sold almost all the government securities they could find in the portfolios of the twelve Federal Reserve Banks. In the first nine months of 1924, the committee repurchased an equivalent volume. Of the invaluable virtues which this action revealed to many students we have already spoken. According to the third link in our chain this action in the latter half of 1922 and the first half of 1923 should have reduced the reserves of member banks and during the first three quarters of 1924

⁷³ This would result only in the event of heavy imports of gold. The sale of securities would not bring a compensating flow of other assets in the form of member bank discounts.

should have increased the reserves of member banks in each case by an amount roughly approximating the obligations sold and bought respectively. Eschewing a further development of the *a priori* premise, and examining the actual facts, we find that as the Federal Reserve Banks reduced their government securities through open market sales the member banks increased their discounts; as the Federal Reserve Banks increased their supply of government obligations the member banks reduced their discounts. In effect, the Federal Reserve Banks substituted one type of asset for another, the discounted notes of the member banks for the certificates of indebtedness of the government in one case and vice versa in the other. In effect the reserves of the member banks were not affected. For the evidence see Charts and the table on pages 278 and 279.

Those who attribute importance to the open market operations because of the apparently direct influence which they have upon the volume of credit forget that the guardian institution of reserves has two entrances. We can represent the central bank as a castle with two gates. The main gate is used for ordinary entry and egress. It is called the portal of Loans and Discounts. The other is a postern and only obligations with a special pass-word have the right of independent entry. These are commercial bills dressed in attire which the law defines. Another class comes and goes through this auxiliary gate. This class consists of Government securities and they come and depart only on specific orders from within the castle. As these two latter classes come in they bring in dollars which are added to the reserves. As they leave they take with them the dollars which they brought and the reserves within are reduced. If these reserve dollars are evicted, i.e., the bank sells securities, it does not mean that entry to the castle is barred. They simply run around to the front portal and upon paying an admission fee (the discount rate) they are again admitted. The total number of reserve dollars in the castle is therefore not necessarily altered if the lord sends a number out through the rear gate.

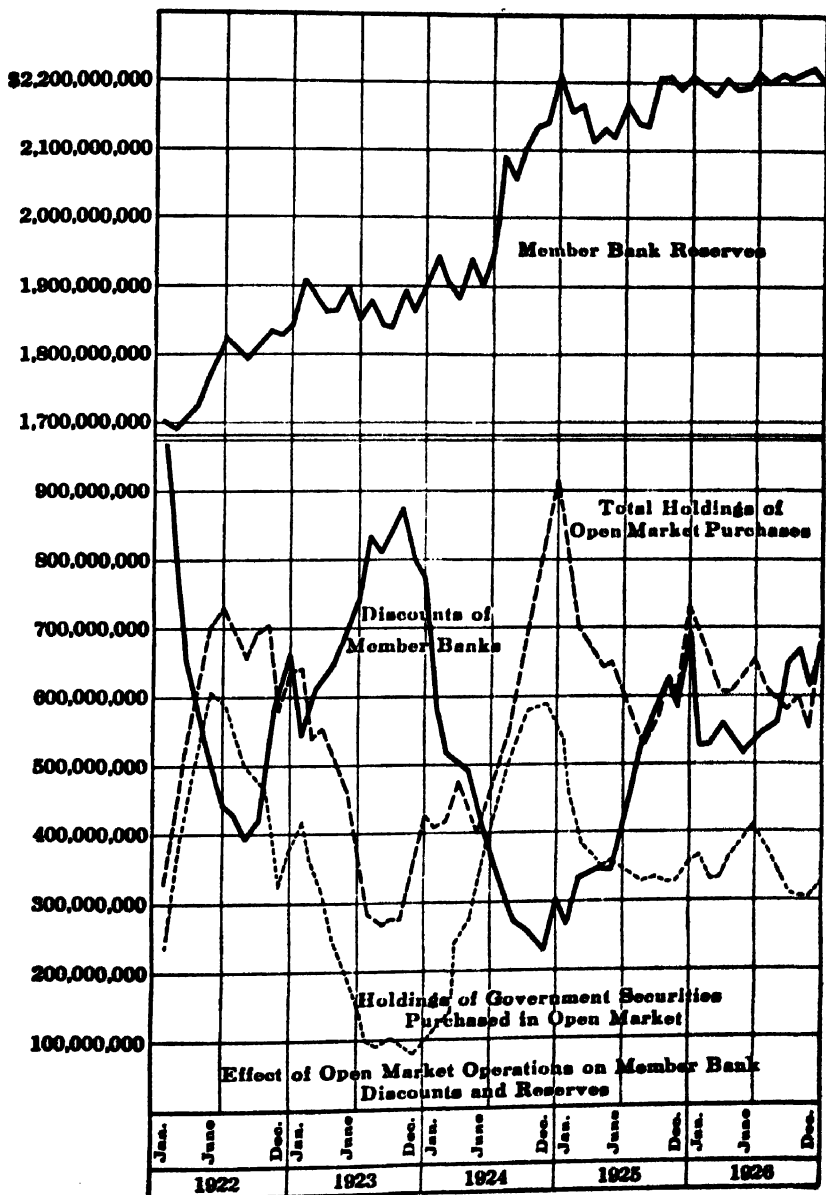


CHART 13

**STATISTICS BEARING ON RELATION OF OPEN MARKET OPERATIONS AND MEMBER
BANK CREDIT (NEAREST MILLION) EXCEPT 7 AND 8**

	1. Gov- ern- ment Secur- ities	2. Open Market Pur- chases	3. Dis- count- ed Bills	4. Member Bank Re- serves	5. Loans and In- vest- ments Member Banks	6. Capital Member Banks	7. Whole- sale Prices	8. Volume of Trade	9. Gold Move- ments
1922									
J.	236	99	969	1,707	.....	....	138.3	94	26
F.	355	87	773	1,689	.....	....	141.4	95	27
M.	458	93	640	1,711	23,419	4,185	142.2	101	33
A.	520	93	577	1,733	.....	....	142.6	100	11
M.	604	103	482	1,783	.....	....	147.6	102	6
J.	593	135	439	1,820	24,358	4,214	149.6	104	11
J.	546	154	428	1,812	.....	....	154.9	100	42
A.	498	159	396	1,799	.....	....	155.0	100	18
S.	487	210	416	1,811	.....	....	153.3	104	23
O.	449	252	484	1,836	.....	....	154.1	104	3
N.	326	260	624	1,825	.....	....	155.5	104	15
D.	380	261	663	1,840	25,769	4,364	156.2	108	24
1923									
J.	421	221	549	1,913	.....	....	155.8	109	24
F.	355	187	611	1,888	.....	....	156.7	110	7
M.	318	232	629	1,863	.....	....	158.6	113	6
A.	230	275	660	1,865	26,332	4,356	158.7	110	9
M.	194	271	708	1,900	.....	....	156.2	110	45
J.	155	225	744	1,852	26,675	4,367	153.5	108	19
J.	97	186	837	1,878	.....	....	150.6	104	27
A.	90	177	811	1,845	.....	....	150.1	104	31
S.	102	174	848	1,839	26,498	4,436	153.7	103	27
O.	92	284	875	1,895	.....	....	153.1	105	24
N.	84	262	802	1,865	.....	....	152.1	108	39
D.	103	322	775	1,898	26,738	4,378	151.0	107	32
1924									
J.	118	303	580	1,951	.....	....	151.2	107	45
F.	134	271	516	1,900	.....	....	151.7	111	35
M.	243	230	479	1,885	26,832	4,468	149.9	105	34
A.	272	174	495	1,944	.....	....	148.4	104	44
M.	323	81	435	1,906	.....	....	146.9	102	40
J.	416	51	375	1,944	27,262	4,486	144.6	99	25
J.	462	44	318	2,091	.....	....	147.0	99	19
A.	537	28	270	2,060	.....	....	149.7	101	16
S.	575	90	263	2,111	.....	....	148.8	105	2
O.	585	178	241	2,138	28,451	4,594	151.9	107	16
N.	587	266	229	2,143	.....	....	152.7	107	13
D.	555	357	302	2,220	29,027	4,532	157.0	111	—29
1925									
J.	465	329	267	2,159	.....	....	160.0	111	—68
F.	385	314	338	2,175	.....	....	160.6	113	—47
M.	376	298	392	2,114	.....	....	161.0	110	—18
A.	355	289	404	2,135	29,285	4,669	156.2	111	—13

STATISTICS BEARING ON RELATION OF OPEN MARKET OPERATIONS AND MEMBER
BANK CREDIT (NEAREST MILLION) EXCEPT 7 AND 8—*Continued*

	1. Gov- ern- ment Secur- ities	2. Open Market Pur- chases	3. Dis- count- ed Bills	4. Member Bank Re- serves	5. Loans and In- vest- ments Member Banks	6. Capital Member Banks	7. Whole- sale Prices	8. Volume of Trade	9. Gold Move- ments
<i>1925—Continued</i>									
M.	361	278	398	2,125		....	155.2	109	— 2
J.	346	265	438	2,172	29,703	4,690	157.4	108	— 2
J.	378	233	482	2,145		....	159.9	110	6
A.	329	206	545	2,137		....	160.4	107	3
S.	335	224	594	2,210	30,369	4,688	159.7	111	— 3
O.	328	296	622	2,214		....	157.6	115	23
N.	332	252	596	2,197		....	157.7	111	—14
D.	358	368	691	2,212	31,200	4,678	156.2	116	1
<i>1926</i>									
J.	368	327	526	2,196	....	....	156.		16
F.	335	306	525	2,187	....	....	155.		22
M.	336	270	559	2,215	....	....	152.		30
A.	370	236	540	2,194	31,070	4,826	151.		—55
M.	398	231	515	2,195	....	....	152.		— 6
J.	409	244	476	2,229	31,391	4,832	152.		16
J.	380	231	549	2,206	....	....	151.		15
A.	354	245	556	2,225	....	....	149.		18
S.	316	264	642	2,209	....	....	151.		—77
O.	306	294	666	2,223	....	....	150.		8
N.	302	247	618	2,232	....	....	148.		9
D.	321	385	672	2,194	31,897	4,944	147.		10

Explanation of statistical table:

- (1) This column gives to the nearest million the average daily holdings of Government Securities. It includes bonds, treasury notes and certificates of indebtedness. Since the purchase and sale of all three affect the market equally dollar for dollar it has been considered proper to include bonds.⁷⁴
- (2) This includes all bills bought in the open market, trade acceptances, bank acceptances, domestic and foreign as well as bills drawn against goods in storage and to furnish dollar exchange.⁷⁵
- (3) Bills discounted for member banks.⁷⁶
- (4) Reserve deposits of member banks.⁷⁷
- (5) Loans and Investments of all member banks on reporting days. Loans and investments rather than deposits have been used because they are more pertinent to the purpose

⁷⁴ Figures are taken from Annual Reports of the Federal Reserve Board.

⁷⁵ *Ibid.*

⁷⁶ *Ibid.*

⁷⁷ *Ibid.*

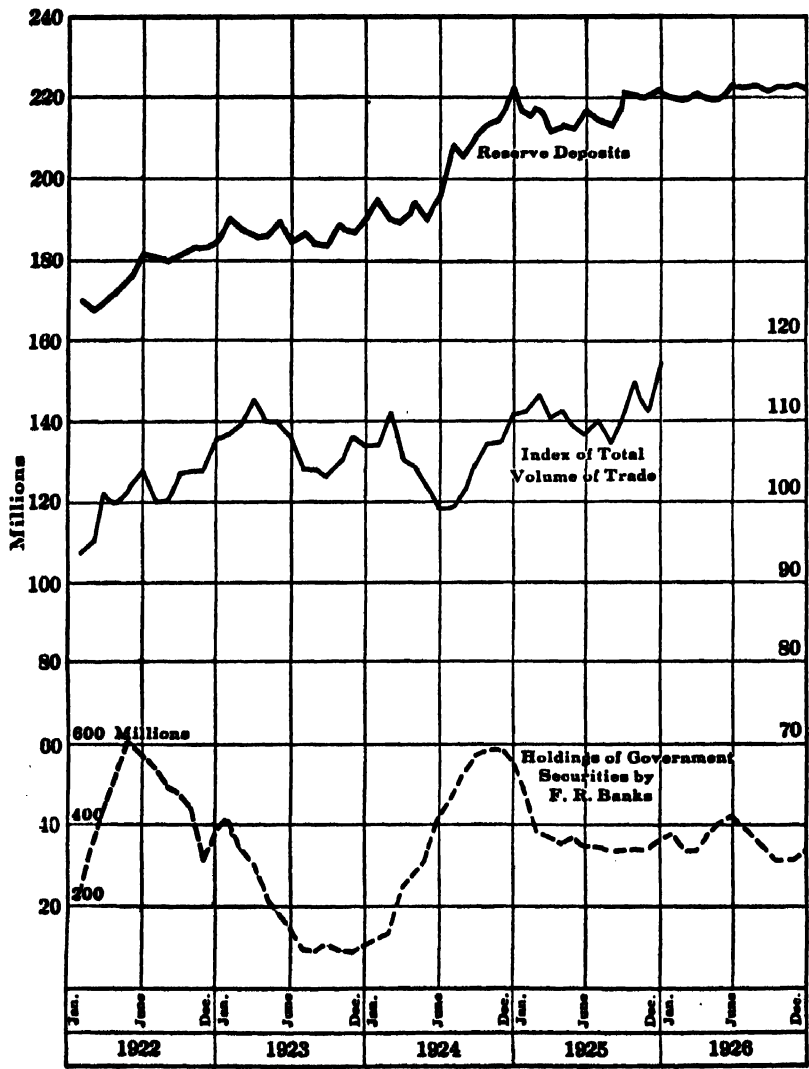


CHART 14

of this inquiry. The question we are here attempting to resolve is "Do open market purchases and sales affect business activity? Can the purchase of securities stimulate this activity? Can their sale retard it?" Business activity, the object to be affected can be reached only through the contacts which it has with the banks. "How can these banks exert an influence on the state of business?" The answer is "By curtailing loans." We are, therefore, interested in bank credit, the magic virus which reputedly invigorates or enervates commerce.⁷⁸

- (6) Capital of all member banks. Private banks are enterprises conducted for profit, primarily. Other things being equal, the total of loans and investments is a function of capital just as a bank's deposit liabilities are a function of its reserves.⁷⁹
- (7) Index of Wholesale Prices, Bureau of Labor Statistics.
- (8) Carl Snyder's index of total volume of trade. This is a composite index consisting of the following indices:

Productive Activity

1. Consumers' Goods	8%
2. Producers' Goods	9
3. Factory Employment	6
4. Motor Cars and Trucks	2
5. Building Construction	4

Primary Distribution

6. Merchandise Car Loadings	5
7. Other Car Loadings	2
8. Wholesale Trade	8
9. Exports	3
10. Imports	2
11. Panama Canal Traffic	1
12. Grain Exports	1

Distribution to Consumers

13. Department Store Sales	8
14. Chain Store Sales	3
15. Chain Grocery Sales	6
16. Mail Order Sales	3
17. New Life Insurance	2
18. Real Estate Transfers	2
19. Advertising	2

General Business Activity

20. Outside Debits	8
21. New York City Debits	5
22. Postal Receipts	1
23. Communication	1
24. Electrical Power Production	2

Financial Activity

25. Shares Sold on New York Stock Exchange	2
26. New Corporate Financing	2
27. Grain Future Sales in Chicago	1
28. Cotton Future Sales in New York and New Orleans	1

Total of Group Weights 100

Wherever necessary each of these series has been corrected for seasonal variation, calendar variation, price changes and secular trend. It is the most comprehensive index of the volume of trade yet devised and enables us to throw into sharper outlines than has ever been possible this hitherto nebulous and much discussed abstraction commonly called business activity.⁸⁰

It simply means that the master believes that such dollars have secured entry on a fee which was too low, and in order to make them pay a higher rate, he first evicts them through the rear gate and then welcomes them at the front. Certain observers standing near the postern are unable to see what compensating admissions take place at the front and as these reserve dollars pass out through the rear they raise an alarm to the effect that the lord is reducing the garrison and that the inhabitants of the countryside had better look to their own defense.

Chart 14 shows the Federal Reserve Bank holdings of Government securities and the reserve deposits of member banks. There is no correlation between the two. The reserves do not decline as the banks sell government paper. In fact from January of 1922 to May of 1923 there is an increase in these reserves of approximately 200 million dollars. From May of 1922 to May of 1923 the Federal Re-

⁸⁰ Carl Snyder, *Business Cycles and Measurements*, pp. 80-81, 310.

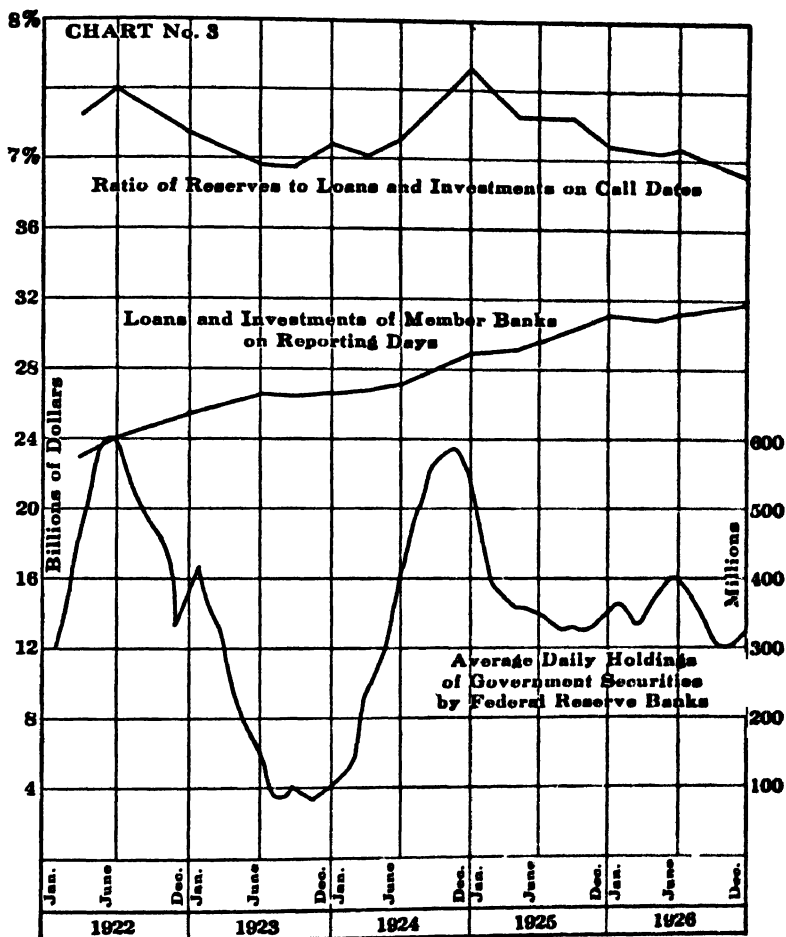


CHART 15

serve Banks sell about 400 million dollars of government obligations. Orthodox expectation is completely reversed. During 1924 there is a substantial increase in the holdings of government securities and also in reserve deposits. Here orthodox expectation is sustained. Whether this latter experience demonstrates an intrinsic causal relationship or only the coincidence of economic phenomena depends upon what you wish to believe.

Proceeding to our next chart to determine the effect of these open market operations upon the credit which the member banks have extended to their own clients, we find a singular absence of any effects whatsoever. The total of these loans and investments increases year after year, the natural consequence of the growth of the country. There is a pause in these advances at the end of 1923 and the beginning of 1924. There is a similar pause in the early months of 1925 and 1926. It is difficult to discover any significant relation between credit extended by member banks to their own customers and the open market operations of the Federal Reserve Banks.

If these operations fail to affect the quantity of bank credit in the country, do they also fail to affect the price of that credit? During the period under consideration, the last eight months of 1923 and the first four months of 1924, the Federal Reserve Banks maintained steadily the highest discount rate of the last six years, $4\frac{1}{2}\%$.⁸¹ The rates charged on prime commercial paper running from four to six months and on call loans in New York show a sympathetic movement.⁸² While the total of loans made under these two groups is large in volume and important they by no means offer an adequate measure of the price paid by the rank and file of borrowers throughout the nation whose numbers and the volume of whose borrowings far outweigh that of the New York market. Taking the member banks in the twelve Federal Reserve Districts located in cities with a population of 100,000 and over we find that they charge rates which bear a rough and non-symmetrical correspondence to the rediscount rates charged by the Federal Reserve Banks. In general, the rates charged to customers are higher during this period and there is evidence of a distinct lag, which is to be expected, since a member bank cannot charge a client a higher rate until his note has matured and application is made for a renewal. In some cities there is a marked correlation between the

⁸¹ See table on page 287. This was written in April, 1928.

⁸² See Chart No. IV and Table No. II.

rate charged by the Federal Reserve Bank and that charged by the member banks in the district. The banks in the districts of Boston, New York, Chicago, and St. Louis show noticeable correspondence. Philadelphia shows slight response and the others are entirely unsatisfactory so far as drawing any conclusions is concerned. One interesting

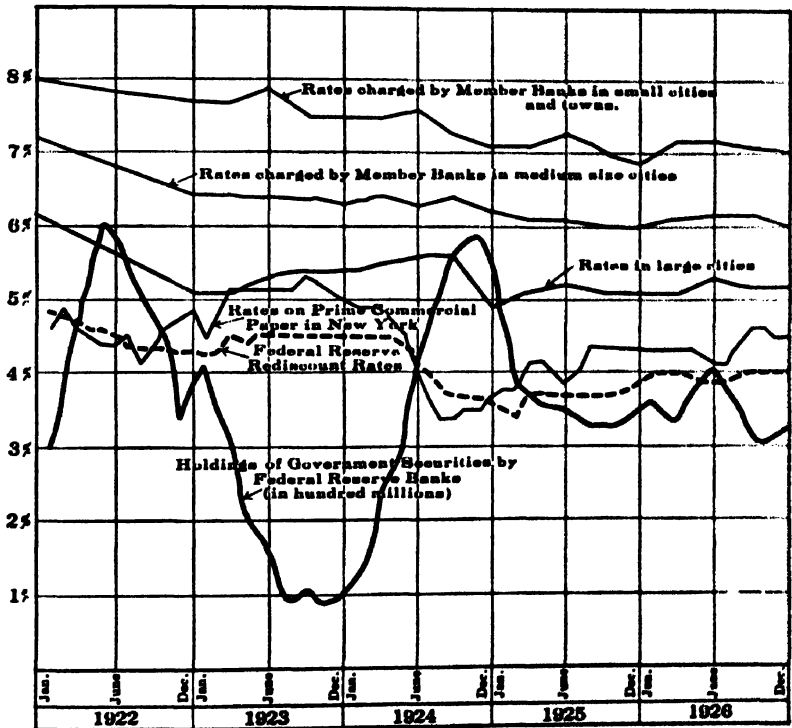


CHART 16

fact is that while all the banks were paying the same price for accommodation at the Federal Reserve Banks, the clients of Boston banks were paying an average of 5.25% on their loans whereas the clients of Dallas banks were paying 6.45%. In the case of banks located in medium-size cities (population of 15,000 to 99,999) the average shows no response to higher rediscount rates. In certain districts, Boston, Chicago and St. Louis, there is an appar-

ent rise which may be attributable to the higher rediscount rate.⁶³

In small cities and towns (population under 15,000) one seeks in vain for any evidence of the influence of changing central bank rates. There is a general decline under way from the post war period, a movement which the higher interest rates of 1923 and 1924 apparently do not interrupt. In December of 1923 the local business man in a small town in the New York district pays 5.9%. At the same time a similar applicant in a similar town in the Dallas district pays 9.7%. The New York bank charging its client 5.9% pays its own Federal Reserve Bank 4.5% for accommodation. The Dallas bank charging its client 9.7% pays its Federal Reserve Bank 4.5%. Yet it is the farmer of the South and West and the banker of the hinterland who have been most unrestrained in their abuse of the Federal Reserve System. A study of the table on page 288 will furnish food for much thought.

The conclusions to be drawn from this evidence are

1. Open market operations have no visible effect upon the reserves of member banks or the volume of advances which they make to their own customers.
2. They enable the Federal Reserve Banks to enforce the discount rate in the New York money market where the forces of supply and demand are in a delicate state of equilibrium and highly sensitive to the influence exercised by the Reserve Banks.
3. They enable the Federal Reserve Banks to exercise some influence on the rates charged to clients in centers where there is some semblance of a market and some degree of free competition among banks and free bidding by applicants.
4. The open market operations have apparently contributed nothing to the volume of credit extended and the rates charged in the South and West and in smaller

⁶³ See Chart No. XVI and table on page 289.

communities not only in the South and West but throughout the country.

AVERAGE RATES CHARGED ON DISCOUNTED BILLS BY 12 FEDERAL RESERVE BANKS
Annual Report, 1926, p. 33

	J.	F.	M.	A.	M.	J.	J.	A.	S.	O.	N.	D.	Year
1922...	4.84	4.77	4.70	4.60	4.59	4.54	4.39	4.34	4.36	4.34	4.29	4.30	4.52
1923...	4.25	4.28	4.49	4.40	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.47
1924...	4.50	4.50	4.50	4.50	4.42	4.16	3.89	3.78	3.69	3.65	3.63	3.56	4.20
1925...	3.53	3.44	3.68	3.73	3.71	3.69	3.68	3.70	3.70	3.69	3.77	3.86	3.70
1926...	3.97	4.00	4.00	3.96	3.87	3.89	3.84	3.94	4.00	4.00	4.00	4.00	3.96

(1) Monthly average rate on 4-6 mos. prime commercial paper, domestic, and

(2) Call loans—at New York.

	1922		1923		1924		1925		1926	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
J.	4%	4½	4½	4¼	4¾	4¾	3%	3%	4¾	4%
F.	4%	5	4¾	4%	4¾	4¾	3%	3%	4¾	4%
M.	4%	4¼	5½	5½	4¾	4½	4½	4	4¾	4½
A.	4½	4	5½	4%	4%	4¼	4½	3%	4%	3%
M.	4%	3¾	5½	4%	4½	3¼	4	3%	4¼	4
J.	4%	3%	5½	5	4	2½	3%	4¼	4½	4½
J.	4½	3¾	5½	5	3%	2½	4	4¼	4½	4¼
A.	4½	3%	5½	5	3%	2	4%	4¼	4¾	4%
S.	4%	4%	5%	5	3%	2	4%	4½	4%	5
O.	4%	4%	5½	4%	3½	2%	4%	4%	4%	4%
N.	4%	4%	5½	4%	3½	2%	4%	4%	4½	4%
D.	4%	4%	5	4%	3%	3%	4%	5%	4½	5
Average	4½	4¼	5½	4%	4	3%	4½	4%	4%	4½

Note: Statistics taken from Babson's Graphic Outlook.

STABILIZATION OF PRICES

AVERAGE RATES CHARGED BY MEMBER BANKS ON CUSTOMERS' PAPER REDISCOUNTED WITH FEDERAL RESERVE BANKS

	Member banks in Federal reserve district of—												
	All dis- tricts	Boston	New York	Phila- delphia	Cleve- land	Rich- mond	Atlanta	Chicago	St. Louis	Minne- apolis	Kansas City	Dallas	San Francisco
BANKS IN SMALL CITIES AND TOWNS (POPULATION UNDER 15,000)													
Average rate charged on paper redis- counted in—													
December, 1921 ...	8.0	6.2	6.1	6.0	6.3	6.9	7.9	7.5	8.0	8.7	8.9	9.7	8.2
December, 1922 ...	7.7	5.8	5.7	5.9	6.2	6.7	7.9	7.5	7.8	9.0	8.8	9.8	8.0
March, 1923	7.7	5.9	6.0	5.9	6.0	6.4	8.0	7.3	7.6	9.0	9.0	9.7	8.1
June, 1923	7.9	6.0	6.0	6.0	6.2	6.4	7.8	7.3	8.0	9.0	8.7	9.6	8.2
September, 1923 ...	7.5	6.0	6.0	5.9	6.1	6.3	7.8	7.3	7.9	8.6	8.6	9.4	8.1
December, 1923 ...	7.5	6.0	5.9	6.0	6.1	6.3	7.7	7.4	7.7	8.9	8.6	9.7	8.0
March, 1924	7.5	6.0	6.0	5.9	6.1	6.5	7.7	7.4	7.8	8.8	8.7	9.4	7.9
June, 1924	7.6	6.1	6.0	6.0	6.2	6.4	7.8	7.3	8.0	8.8	8.9	9.6	7.9
September, 1924 ...	7.3	6.2	5.9	5.9	6.3	6.3	7.6	7.3	7.9	8.7	9.0	9.4	8.2
December, 1924 ...	7.1	6.0	5.6	5.9	6.2	6.3	7.7	7.4	7.4	8.6	8.6	9.8	8.0
March, 1925	7.1	5.9	5.9	6.0	6.2	6.4	7.7	7.3	7.6	8.8	8.9	9.5	8.0
June, 1925	7.3	6.0	5.8	6.0	6.2	6.3	7.7	7.2	8.0	8.6	9.0	9.4	8.0
September, 1925 ..	7.0	5.8	6.0	5.8	6.4	6.2	7.4	7.3	7.7	8.3	8.6	9.3	7.1
December, 1925	6.9	5.8	6.0	6.0	6.3	6.3	7.5	7.3	7.7	8.2	8.3	8.3	7.6
March, 1926	7.2	5.9	6.0	6.0	6.1	6.4	7.8	7.3	8.0	8.6	8.5	9.6	7.8
June, 1926	7.2	5.9	5.9	5.9	6.2	6.2	7.8	7.1	7.8	8.7	8.7	9.3	7.8
September, 1926 ...	7.1	6.0	5.8	6.0	6.2	6.1	7.7	7.1	7.9	7.8	8.6	8.6	7.8
December, 1926 ...	7.0	5.9	5.8	6.0	6.0	6.4	7.7	7.1	7.9	8.2	8.1	9.1	7.6

Annual Report Federal Reserve Board, 1926, pp. 97-99.

AVERAGE RATES CHARGED BY MEMBER BANKS ON CUSTOMERS' PAPER REDISCOUNTED WITH FEDERAL RESERVE BANKS

Member banks in Federal reserve district of—

<i>All dis- tricts</i>	Boston	New York	Phila- delphia	Cleve- land	Rich- mond	Atlanta	Chicago	St. Louis	Minne- apolis	Kansas City	Dallas	San Francisco
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BANKS IN MEDIUM-SIZE CITIES (POPULATION OF 15,000 TO 99,999)

<i>Average rate charged on paper redis- counted in—</i>												
December, 1921 ...	7.2	6.1	6.0	6.4	6.8	7.5	7.1	7.6	8.9	7.3	8.3	7.3
December, 1922 ...	6.4	5.5	6.0	6.1	6.2	7.0	6.3	6.6	7.4	6.4	8.6	7.2
March, 1923	6.4	5.5	5.8	6.2	6.1	7.2	6.2	5.8	6.8	6.5	8.2	7.5
June, 1923	6.4	5.4	6.0	6.1	6.1	7.1	5.9	5.6	7.0	6.8	8.1	7.6
September, 1923 ...	6.4	5.6	5.9	6.2	6.2	7.0	6.0	6.1	..	6.8	8.1	7.1
December, 1923 ...	6.3	5.6	5.9	6.1	6.1	6.8	6.2	6.5	7.1	6.9	8.3	6.2
March, 1924	6.4	5.6	6.0	6.1	6.3	7.1	6.3	6.4	..	7.0	8.4	6.8
June, 1924	6.3	5.7	5.8	6.0	6.1	6.9	6.2	6.4	7.3	7.0	7.5	7.3
September, 1924 ...	6.4	5.8	5.6	6.1	6.1	7.1	6.5	6.4	7.2	7.1	7.3	7.6
December, 1924	6.2	5.1	5.7	6.1	6.1	6.6	6.2	..	7.1	..	..	..
March, 1925	6.1	5.4	5.7	6.0	6.1	6.9	6.0	..	7.1	8.0	..	8.0
June, 1925	6.1	5.0	5.6	6.1	6.1	6.6	5.9	..	7.1	8.0	7.8	7.3
September, 1925 ...	6.0	5.0	5.8	6.0	6.2	6.1	6.1	6.4	..	7.6	7.8	7.1
December, 1925	6.0	5.2	5.8	6.1	6.2	6.6	5.8	6.0	..	..	8.6	..
March, 1926	6.1	5.3	5.7	6.0	6.2	6.4	5.9	6.4	..	6.3	7.7	6.4
June, 1926	6.2	5.6	5.9	6.1	6.0	7.0	6.0	6.4	7.0	6.7	6.6	6.0
September, 1926 ...	6.2	5.5	5.6	6.1	6.0	6.9	6.1	6.5	6.7	5.8	6.5	5.4
December, 1926	6.0	5.7	5.8	6.1	6.1	6.6	6.0	6.5	..	..	5.5	5.0

AVERAGE RATES CHARGED BY MEMBER BANKS ON CUSTOMERS' PAPER REMDISCOUNTED WITH FEDERAL RESERVE BANKS

	Member banks in Federal reserve district of—												
	All dis- tricts	Boston	New York	Phila- delphia	Cleve- land	Rich- mond	Atlanta	Chicago	St. Louis	Minne- apolis	Kansas City	Dallas	San Francisco
BANKS IN LARGE CITIES (POPULATION OF 100,000 AND OVER)													
Average rate charged on paper redis- counted in—													
December, 1921 ...	6.1	6.1	6.0	6.0	6.3	6.1	7.1	6.4	6.4	6.8	7.2	7.6	6.1
December, 1922 ...	5.1	4.8	4.9	5.0	5.6	5.9	5.8	5.0	5.3	5.7	6.3	6.3	5.2
March, 1923	5.1	4.9	5.0	5.2	5.4	5.7	5.6	5.1	5.2	5.6	6.3	6.5	5.3
June, 1923	5.3	5.0	5.3	5.2	5.6	5.8	5.7	5.3	5.2	5.9	6.6	6.6	5.7
September, 1923 ...	5.4	5.2	5.3	5.5	5.6	5.9	5.9	5.5	5.4	5.7	6.3	6.4	5.6
December, 1923 ...	5.4	5.3	5.4	5.5	5.7	6.0	5.8	5.6	5.6	5.7	6.3	6.4	5.7
March, 1924	5.5	5.2	5.2	5.4	5.6	5.9	5.8	5.5	5.6	5.9	6.5	6.5	5.6
June, 1924	5.6	5.3	5.7	5.4	5.4	6.0	5.8	5.5	5.3	6.0	6.7	6.5	5.7
September, 1924 ...	5.6	4.9	5.6	5.7	6.0	6.0	6.0	5.3	..	5.4	..	5.5	5.9
December, 1924 ...	4.9	..	5.3	5.3	5.7	6.0	5.7	4.9	4.9	6.0	..	6.2	6.6
March, 1925	5.1	4.8	5.5	5.4	5.2	6.0	5.7	4.9	4.3	6.0	..	5.7	5.8
June, 1925	5.2	4.9	5.2	5.6	5.5	6.0	6.2	4.5	5.0	6.0	6.0	5.5	6.1
September, 1925 ...	5.1	4.9	4.5	5.3	5.4	5.9	6.3	4.7	5.0	5.6	5.6	..	6.4
December, 1925 ...	5.1	4.9	5.3	6.0	5.5	5.9	5.6	4.7	5.0	5.5	5.9	5.5	5.5
March, 1926	5.1	5.6	5.9	5.4	5.6	6.0	5.8	4.7	4.8	5.6	6.4	5.9	5.6
June, 1926	5.3	5.1	5.9	5.5	5.3	6.0	6.0	4.9	4.9	5.6	6.9	6.2	5.5
September, 1926 ...	5.2	5.6	4.8	5.2	5.3	6.0	5.9	4.9	5.0	5.4	6.4	5.5	5.6
December, 1926 ...	5.2	5.2	5.8	5.5	5.6	6.0	5.9	4.9	4.9	5.5	7.2	6.0	6.2

CHAPTER XXII

Earlier Controversy—Wicksell and His Theory of Price Control—Cassel the Heir of Wicksell—Central Bank Rates and the Price Level—Object of Central Bank Policy—Value of Gold in Terms of Goods—Gold as an Instrument of Stabilization—Relation Between Interest Rate, Quantity of Credit and Price Level—Interest as Cost of Loan—Interest as Price Paid for Use of Capital—Prospects of Repayment and the Rate of Interest—Central Bank Rates and Member Bank Rates—As a Banking Cost—Other Costs Compared to Interest on Borrowed Reserves—Analogy with Industry Using Single Raw Material—Central Bank Rates Affecting Member Bank Rates—Interest Rates as an Artificial Price Element Capable of Regulation—Interest Theories and Rate Control—Reversing the Normal Causal Order—Limitations of Range Within Which Discount Rate Can Move—Use of Discount Rate to Control Price Level.

THE relation of interest rates to prices is not an original issue but it has recently been revived and intensified by Representative Strong's proposed amendment¹ to paragraph (d) of section 14 of the Federal Reserve Act directing the Board to establish from time to time a discount rate with a view, among other things, of promoting a stable price level for commodities in general.

Among earlier writers it was the ability of the central bank rate to control the market rate of interest rather than the price level which was the subject of discussion. While a control of the market rate was conceded to have an influence on prices, near or remote, according to the temper of the writer, there was no expectation of a precise or even approximate control. Walter Bagehot in his "Lombard Street" expressed the conviction that the rate set by the Bank of England necessarily dictated the general market rate. His argument was that the credit supply aside from that emanating from the Bank of England was insufficient to provide for the necessary credit and this left the Bank of England in a marginal position where it could set the rate.² This view was combated by Hartley Withers on the

¹ H. R. 7895, 69th Congress, 1st Session.

² Walter Bagehot, *Lombard Street*, New York, Charles Scribner's Sons, 1912, p. 114.

ground that Lombard Street could very often ignore the Bank of England because of the existence of a sufficient supply of funds to satisfy all needs without recourse to the Bank.³

These two views represent opposing sides of the issue: "To what extent can the central bank control the market rate?" No serious attempts were made to carry either an affirmative or negative answer through to a logical conclusion since the answer was still mired in controversy and was incapable of a resolution which would be generally acceptable.

In 1898 there appeared in German a work by Knut Wicksell *Geldzins und Güterpreise* (Jena, Gustav Fischer) in which an affirmative answer to our issue is assumed and a relationship developed between the interest rate and the level of prices. In 1907 before a meeting of the Royal Economic Society the same author undertook to expound and defend the following rather startling thesis:

"If, other things remaining the same, the leading banks of the world were to lower their rate of interest, say 1 per cent. below its ordinary level, and keep it so for some years, then the prices of all commodities would rise and rise and rise without any limit whatever; on the contrary, if the leading banks were to raise their rate of interest, say 1 per cent. above the normal level, and keep it so for some years, then all prices would *fall* and fall and fall without any limit except Zero."⁴

This is so radical a proposition as to strike even one accustomed to academic eccentricities as absurd. However, Professor Wicksell is very careful to raise at the outset impregnable barriers from the shadow of whose assured protection he can smile complacently at the futile assaults of his critics. What are these invulnerable ramparts? They are founded upon and built of the simple phrase "other things being equal." Before the predicted effect of a drop

³ Hartley Withers, *The English Banking System*, National Monetary Commission, Senate Document No. 492, 61st Congress, 2nd Session, Washington, Government Printing Office, 1910, p. 18.

⁴ *The Influence of the Rate of Interest on Prices*, The Economic Journal, Vol. XVII, p. 213.

in the interest rates of central banks can take place "other things must remain equal" and the Swedish savant artlessly volunteers that since other things can never remain the same, it is impossible to prove that he is mistaken. He bases his thesis upon the principle that the productivity of capital determines the rate of interest. If anyone can secure capital at a rate less than that which can be obtained as return on investment the difference between the rate charged by the bank and the rate assured by investment opportunities will lead to an infinite demand for funds since there will always be a profit margin and if funds are increased indefinitely the price level will also rise indefinitely. Which is that which was to have been proved. That a proper control of the interest rate will assure a stable value for the monetary unit becomes a self-evident expedient.

In 1903 there appeared a work on *The Nature and Necessity of Interest*⁵ by a compatriot of Wicksell, Gustav Cassel, in which he presented evidence of the influence of the former.

"Now it is universally accepted that credit can be regulated by the single expedient of the rate of interest, and, indeed, that it should not be interfered with in any other manner. Hence all schemes for securing stability of money, though they differ considerably in the means they propose to use, ultimately depend on the same expedient—a wise administration of the bank rate."⁶

We here see that what is believed in a portion of Sweden becomes "universally accepted" and Knut Wicksell is assured of a disciple who will carry on his teachings. This task Professor Cassel has carried out with great vigor and fidelity. The events of a generation of human history crowded as perhaps no other similar period has been with experiences rich in significance to the economist have served only to confirm the faith and establish an empirical foundation for what has previously been but an abstraction even though it had the qualities of a manifest verity. Writing

⁵ Macmillan & Co., Limited, London, 1903.

⁶ *Ibid.*, p. 163.

after the war his work exhibits a naive confidence in the power of the central bank.⁷

This power is derived from the discount rate which is not only an effective means of regulating the currency but has been the actual means by which such regulation has been achieved in the past. It is true that experience during and after the war could furnish little substance for this conviction. It is true likewise that the responsible heads of the great central banks unequivocally rejected the imputation of monetary omnipotence to them and the instrument which they directed, to wit, the discount rate. All this is very plausibly explained by Cassel on the ground that the central banks, having lost control of their monetary systems during the war, are attempting to evade the reflection of guilt and incompetence by alleging that the discount rate has very little influence on prices.⁸ He should have conceded at least that the leaders of our great banks showed remarkable astuteness in getting together and agreeing on the alibi.

Since Cassel has accepted the baton passed on by Wick-sell and is at the present time the outstanding protagonist of the efficacy of the discount rate, we shall devote some space to a quotation of his views as being the ablest and most typical of the school of thought which he leads.

"The main factor determining interest rates throughout the entire banking system in a country is the central bank's discount rate, and in addition the central bank naturally possesses a very great influence owing to the general advice it is able to give to the private banks as to their credit policy."

"Demands for credit vary in their intensity. A bank policy bent on maintaining a fixed value for the monetary unit, therefore, must be continually adjusting its discount rate so that it may thereby actually succeed in limiting the demand for capital in proportion to the supply of savings. The interest rates of the banks have in this respect exactly the same function as any other

⁷ *The World's Monetary Problems*, Two Memoranda written for the League of Nations, Constable & Company Limited, London, 1921, pp. 135-136.

⁸ *Money and Foreign Exchange after 1914*—Macmillan, New York, 1922, p. 101.

^{*} *Ibid.*, p. 103.

price. The social-economic function of prices is just this: to procure on all points an adequate restriction of the demand;"¹⁰

"The only rational and at the same time practically useful rule to go by, therefore, is that *demands for capital must, by means of the rates of interest of the banks, be limited to the amounts of funds supplied by current saving, so that no artificial purchasing power, with its accompanying rise in prices, will be created.*"¹¹

"But no gold reserve in the world can guarantee the redeemability of a currency if a general parity with gold is not maintained through a proper discount policy."¹²

He holds that a gold reserve is of minor importance in maintaining the parity of a currency with gold and that the factor of predominant importance is the discount rate of the central bank.

"It is therefore an absolutely false idea to regard the percentage of gold cover in the banks in any way as a factor essentially determining the value of the currency."¹³

"As a discount policy is actually capable of regulating the value of the monetary unit in the case of a gold standard, so as to maintain its level with gold, it is an inevitable conclusion that a right discount policy must also be capable of regulating the value of a free paper standard."¹⁴

"The central bank undoubtedly has a determining influence over the intrinsic purchasing power of a paper currency. If anyone disputes this, he must undertake the impossible by answering the question: What else determines the value of paper currency?"¹⁵

The discount rates did not function during and after the war as Cassel's explanation would lead us to expect because they were not adjusted to conditions and also because the authorities of central banks did not know what it was all about.

"The cause of the central banks' weak discount policy naturally lies first and foremost in the extremely vague notions as to the true import of the monetary phenomena entertained by bank managements."¹⁶

In his latest work on the subject, "Das Stabilisierungs Problem,"¹⁷ he reaffirms his faith in the discount rate and

¹⁰ *Ibid.*, pp. 103-104.

¹¹ *Idem.*

¹² *Ibid.*, p. 111.

¹³ *Ibid.*, p. 104.

¹⁴ *Ibid.*, p. 106.

¹⁵ G. A. Gloeckner, Leipzig, 1926.

¹⁶ *Ibid.*, p. 105.

¹⁷ *Idem.*

reasons out carefully its relation to the problem of stabilization. Since this is our subject and since we propose to take issue with him, it is necessary in the interest of fairness to state his case as presented in his latest utterance in some detail even at the risk of repetition.

Cassel contends that it is no more difficult to maintain a monetary standard on the basis of stable purchasing power, i.e., an index number, than it is to maintain it on a gold basis, that maintaining it on the latter offers just as many difficulties as the former. It is not correct to speak of stabilization on a purchasing power basis as an untried experiment and to thus contrast it with a gold standard. Under the latter we have a monetary régime so regulated that the monetary unit has a purchasing power equivalent to that of a given amount of gold. If the latter should maintain a constant purchasing power our problem would end there but this does not happen to be the case. Therefore, when it is sought to stabilize the value of this gold unit in terms of goods, we are confronted with precisely the same difficulties which we meet when we undertake to stabilize the unit directly in terms of purchasing power.¹⁸

The purpose of a gold reserve and the object of central bank policy are to maintain the purchasing power of the monetary unit on a parity with that of gold. In undertaking this the central bank must employ precisely the same methods which would be necessary in administering a policy of stabilization.¹⁹

¹⁸ *Ibid.*, pp. 34-35.

¹⁹ "Die Einlösbarkeit der Währung dient also dazu, die Zentralbank zu zwingen, unmittelbare Massnahmen für eine Hebung der Kaufkraft zu ergreifen und zwar auf ein so hohes Niveau, dass die Inanspruchnahme der Goldreserve abgewehrt wird. Die Bedeutung der Einlösbarkeit liegt also von diesem Gesichtspunkte aus betrachtet einzig darin, dass sie als ein Mittel dient, die Zentralbank zu zwingen, die Währung zu einem stabilen Werte zu erhalten, m.a.W. gerade diejenigen Massnahmen zu ergreifen, welche eine Stabilisierungs-politik immer voraussetzt." (*Ibid.*, p. 35.)

"Die Voraussetzungen und Mittel für die Aufrechterhaltung eines Goldmünzfusses müssen deshalb dieselben sein wie für die Stabilisierung einer Währung zu einer festen Kaufkraft, und die wesentlichen Schwierigkeiten, denen eine solche stabilisierung begegnet, müssen auch dann vorhanden sein, wenn es gilt, eine Währung zu einer unveränderten Goldparität aufrechtzuerhalten." (*Idem.*)

The insistence upon convertibility is the result of the fallacious belief that currency notes are primarily evidences of indebtedness rather than means of exchange. Their value depends therefore not upon their convertibility but rather upon the supply.²¹

In order that stability in the purchasing power of money may be achieved, it is necessary that the supply of money be elastic and under the control of the central bank with stability as the conscious object "zielbewusst reguliert wird."²²

The conditions essential to effective control by the central bank are:

1. That no currency shall be issued by any other authority than that of the central bank.²³
2. That the central bank shall be free of all political influences and especially any claim on the part of the government for financial support.²⁴
3. That the government shall not resort to extensive borrowing to provide for deficit in the budget.²⁵
4. That there be an approximate balance of foreign trade.²⁶

By what means may a central bank regulate the supply of money? It is impossible for it to extend credit up to a certain point and then close shop because the maximum point has been reached. Under certain definite conditions the central bank must be prepared at all times to extend accommodation. These conditions also serve to limit the extension of bank credit. The bank may limit its expansion by demanding certain securities, by limiting the period of loans, by designating the purposes to which bank credit may be devoted, etc.²⁷ While all these means aid the bank in its attempt to control credit none of them, nor in fact all of them taken together, offer a bank plenary power in the regulation of the means of payment. The bank requires

²¹ *Ibid.*, p. 36.

²² *Ibid.*, p. 37.

²³ *Ibid.*, p. 38.

²⁴ *Idem.*

²⁵ *Idem.*

²⁶ *Ibid.*, p. 39.

²⁷ *Ibid.*, p. 43.

a more completely effective means of restricting credit and that need is satisfactorily met by the discount rate.²⁹

It would be difficult indeed to discover a more unequivocal advocacy of the power of the discount rate in regulating the value of money. It is not only the most important instrument in the possession of the central bank but actually the only effective one. Cassel maintains that while the discount rate has usually been associated with paper money régimes it has, as a matter of fact, been the means whereby money in gold standard countries has been maintained on a parity with gold.

Since the discount rate is the price paid for the use of money, and since the value of money depends upon the supply in use, a drop in the discount rate increasing the supply of bank credit and money used will raise prices and a rise in the discount rate decreasing the amount used will cause prices to fall.³⁰

The banks may regulate their interest charges by observing the price level. If this rises it is *prima facie* evidence that the interest rates have been too low since the rise is the direct consequence of the low interest rates.³¹ If the price level falls, it falls as the result of an interest rate which is too high. The price level, therefore, may serve as the guiding line for the discount policies of banks.³²

Since the discount rates charged by the various banks depend upon the rate charged by the central bank the

²⁹ "Dieses Mittel ist der Preis, den die Bank für das Zurverfügungstellen von Vorschüssen verlangt, d.h. die Zinssätze, die sie anwendet. Unter diesen Zinssätzen ist der Diskontsatz der wichtigste. Die übrigen Zinssätze stehen im allgemeinen in einem bestimmten Verhältnisse zum Diskontsatz, und es genügt deshalb, wenn wir in diesem Zusammenhange nur den Diskontsatz berücksichtigen. So gelangen wir zu der Schlussfolgerung, dass der Diskontsatz das Mittel ist, mit welchem eine Zentralbank letzten Endes die Kreditgewährung und somit die Zahlungsmittelversorgung des ganzen Landes reguliert." (*Ibid.*, p. 44.)

"Der Diskontsatz ist deshalb der einzige wirkliche Regulator des Geldwertes eines Landes." (*Idem.*)

³⁰ *Ibid.*, p. 45.

³¹ *Ibid.*, p. 46.

"Die wirkliche Richtschnur für die Zinspolitik der Banken ist deshalb die aufrechterhaltung eines konstanten Preisniveaus." (*Idem.*)

latter may maintain the "Unveränderlichkeit des Preisniveaus" by regulating the discount rate.³³

Hundreds of years of banking experience has shown that central banks have been compelled to regulate the value of money through the discount rate. That the gold standard can alone achieve stability or aid in the maintenance of stability is false philosophy.³⁴ The direction of every central bank shows that a parity with gold can be maintained only through a correct discount policy. As a matter of fact, if the value of gold itself changes, it serves only to add difficulties to the problem of stabilization.³⁵ Yet it is a matter of common knowledge that a host of central banks have during the course of a generation managed to solve this problem in spite of the complications imposed by the gold standard.³⁶ Therefore the attempt to stabilize on a paper money standard should not only be possible but should be easier than stabilization with a gold standard. That there might be political difficulties in carrying out a program of stabilization based upon paper money he concedes but as to the adequacy of the discount rate as the instrument of regulation there can be no question.³⁷

His views of the American situation are of interest to us. He was perfectly aware of the frequently expressed thought in Europe that the excessive gold supply of America would lead to inflation in the United States. This opinion he opposes by the contention that the gold supplies of the United States are no more than sufficient for her needs.³⁸ As to the policy of the Federal Reserve Board he admits that the board has denied that its policy was directed primarily to the maintenance of a stable price level but insists that the use of other guides by the Board is more apparent than real and that the actually achieved purpose of the Federal Reserve policy is stability of the price level whether the Board will admit that or not.³⁹ He holds with Keynes that the Federal Reserve Board has deliberately

³³ *Idem.*

³⁴ *Idem.*

³⁵ *Ibid.*, p. 47.

³⁶ *Idem.*

³⁷ *Idem.*

³⁸ *Ibid.*, pp. 78-82.

³⁹ *Ibid.*, pp. 82-85.

restrained the natural influence of the flood of gold which poured into the United States.⁴⁰

In America the distressing aftermath of the war raised a substantial element which believed that the deflation was largely the result of the drastic discount policy of the Federal Reserve Board. This group believed that if the discount rate had enough power to produce the economic debacle of 1920 and 1921 then that power so disastrously demonstrated should be hitched to a more laudable purpose. Among the writers in this country who have expressed considerable confidence in the puissance of the discount rate are John R. Commons,⁴¹ and Irving Fisher.⁴² There are many others, but these two are typical.

Like Cassel practically all the writers who urge the controlling power of the discount rate urge it on the ground of a naive price theory in accordance with which a restriction in the demand for credit is effected whenever the price of credit, i.e., the interest rate, is raised, and expansion takes place whenever the price is lowered. Since credit is the vital blood of business, the latter can be restricted or expanded or stabilized or vibrated or in fact made to jump through hoops and do somersaults by the proper application of the discount rate. Since prices depend upon the quantity of the purchasing media in circulation, other things being equal, the price level can be controlled and the business cycle eliminated and all this by the proper manipulation of the discount rate. This might strike the casual student as a large order and so indeed it is. We may examine this proposition from three angles which we will present in the form of questions.

1. Is the interest rate actually the price paid for the use of credit?
2. Does the interest rate determined by the central

⁴⁰ *Ibid.*, p. 91.

⁴¹ See *The American Economic Review*, March, 1925, pp. 43-52, *Stabilization of Prices and Business* and also his testimony before the Committee on Banking and Currency, Hearings on H. R. 7895, 69th Congress, 1st Session, Part II, pp. 1074-1121.

⁴² *Ibid.*, pp. 71-72.

bank regulate the interest rate charged by other banks?

3. Granted that our answer to the preceding question is in the affirmative, does it follow that the rate charged will control the price level and the aberrations of business which give rise to the cycle?

That the interest paid is the price of the privilege of using a given amount of money and credit for a given length of time seems on the surface a self-evident truth and for such it has been assumed by the writers quoted. A man borrows a hundred dollars for a year and at the end of the year pays back the hundred dollars plus an additional six dollars and the latter constitutes the price paid for the use of the former. It seems no different than using a house for a year at the end of which we pay the landlord a year's rental. The latter is the payment for the use of an economic agent for a year and appears in all superficial respects similar to the payment of the six dollars for the use of a hundred dollars for a year. But the identity is superficial only. A more careful study reveals profound differences which place the use of the hundred dollars on an altogether different plane. In the first place the tenant of the house assumes no responsibility for the house other than that he should not subject it to a usage more severe than that of the average reasonable tenant. The risk of fire, storms, earthquakes, revolutions and the multitude of changes in environmental factors or larger factors of demand and supply which may alter the value of the house are all assumed by the landlord. The sole concern of the tenant is the payment of the rent. He does not tear the house apart for the purpose of rebuilding it or in order to use the material for an entirely different purpose which would make the task of restoring the original house a serious one. There is no intention of altering the form or content, the appearance or substance of the residence. Practically the sole consideration which burdens the tenant is the payment of the landlord at the end of the year. Insofar as the payment of interest is likewise a payment made at the end of the year, it is a consideration similar in character to the rent. But

there all similarity ceases. It is only in the most exceptional cases that the borrower has any intention of maintaining the exact one hundred dollars intact that he may return them at the end of the year. Such a use of funds has never found high favor in the business world and it is difficult to discern any incentive for such a use. Money and credit yield an income only when they are passed on to others in exchange for goods and services. In so passing them on, the borrower for the time being loses all control over them, and the thing borrowed unlike the house rented assumes a thousand different forms and passes through multifold transmutations so that its original identity is completely lost. It is no longer a hundred dollars. It may now be a horse, five tons of fertilizer, a shipment of hardware or the first payment on a car. Will the original lender be willing to take these things in the place of his hundred dollars at the end of the year? He may be compelled to but we may be sure that he will not embrace the necessity with enthusiasm. He will accept them only because of the failure of the borrower to fulfill successfully the first of the considerations on which the loan was made. That first condition was that the hundred dollars be returned at the end of the year. It is true that they need not be the identical hundred dollars borrowed but a hundred dollars they must be and a horse or five tons of fertilizer will not do. We have here a distinction between the price paid for the use of an ordinary economic agent and that paid for money which is usually calmly ignored by the discount theory champion and yet is of such importance that it will alter materially the premise upon which his case rests. This premise is that the interest rate is the price paid for the use of money. As a matter of fact, the interest rate is only the second and by far the less important of the two conditions which are the prerequisites for the granting of any loan. The first is that the amount borrowed be repaid and this is by no means as simple a matter as the vacating of a house by a tenant. There is no need for the consumption or complete alteration of the house. It can serve without change. There is

every need for the complete transformation of the hundred dollars. In fact it cannot, ordinarily, satisfy the needs of the borrower at all unless it is consumed. Its return to the lender, therefore, involves difficulties which are entirely absent in the case of the house. The lender must be certain that the hundred dollars are repaid at the expiration of the loan period. The borrower must be certain that he will be able to pay back the hundred dollars on the day his note matures. The confidence on the part of the lender and the conviction on the part of the borrower that this can be done are infinitely more important than that the rate of interest should be six per cent or eight per cent. Of what avail is a five per cent rate to the borrower if in the disposition of his borrowed purchasing power he has erred, or conditions over which he has no control have conspired to destroy his ability to repay? Of what value is a ten per cent rate to the lender if at the end of the loan period the borrower cannot repay the principal? Both parties to the transaction are therefore properly and primarily concerned with the prospects of repayment. Will a three per cent interest rate as contrasted to a six per cent rate materially increase the ability of a business man to repay at the end of the period? Will a textile manufacturer to-day in the prevailing depression of the industry be able to employ a loan in a productive manner so that he may dare to assume the risk of conversion into goods and services and the counter conversion of goods and services into funds with which to repay the loan simply because the interest rate is four per cent instead of six or seven? Would such a low interest rate have any essential effect upon his ability to fulfill the primary condition of the advance, namely, its repayment at the end of the period?

What Cassel and his disciples have entirely ignored is the fact that the price of a given accommodation has a two-fold character. It is in a sense a compound price. For the right to use a hundred dollars, you must agree first of all to pay a hundred dollars at the expiration of the period. Secondly, you must pay an additional amount which

we may consider as insurance and compensation for waiting. The great error of these writers is that they have assumed that the payment of the hundred dollars is as simple a matter as getting out of a taxi after reaching your destination or returning a book which you have borrowed. The highly hazardous experience of the loan during its existence as an obligation of the borrower has not occurred to them or if it has they have not taken the pains to account for it. To assert, therefore, that the interest paid, the second and minor of our two considerations, the least important element in our compound price, constitutes the cost of the loan to the borrower is just so much *jeune* theoretical tinsel. As a bit of academic naiveté it is innocuous enough but when it is persistently and seriously advanced by economists of repute as the instrument for the control of the appallingly colossal mechanism of modern business and as the "single expedient" for the regulation of credit and prices it becomes menacingly mischievous.

Our second question deals with the influence of the rate charged by the central bank on the rates charged by other banks to their own customers. Here again we are confronted by certain assumptions made by those who assume that the rate charged by the central bank must necessarily be controlling in determining the rate charged by other banks. The first of these assumptions is based upon an analogy with an industry which uses a single raw material, the cost of which constitutes such an important part of the total cost of producing the product in the next stage that any change in the price of the basic material must be followed by a change in the price of the more finished product. A good example of an analogy which may suggest the assumption of the discount theorists is that of flour milling. Obviously the principal raw material with which the mill deals is wheat and the cost of this single element is so important that there is always a constant difference between the price of wheat and the price of flour, any change in the price of the former being followed by a corresponding change in the price of the latter. Another example is sugar.

STABILIZATION OF PRICES

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IMPORTANT INCOME STATEMENT ITEMS FOR ALL NATIONAL BANKS (000 omitted)

	No. banks	Interest and discount on borrowed money	Taxes	Net losses	Other expenses and contributions to Red Cross	Salaries and wages	Interest on deposits	Losses on loans and discounts	Losses on bonds and securities	Other losses	Total losses charged off on loans and discounts, bonds and securities, etc.	Recoveries	Total expenses	Net expenses	Net addition to profits for year
1918	7691	20,380	51,951	74,473	80,831	114,130	242,893	33,964	44,350	13,166	90,580	16,107	600,765	584,538	212,332
1919	7763	53,504	45,052	59,614	92,233	139,656	260,335	35,440	27,819	17,421	80,680	21,066	691,460	670,394	240,366
1920	8019	82,720	78,484	90,643	111,097	175,452	287,637	31,284	61,790	21,481	114,555	23,913	850,945	827,033	282,083
1921	8147	119,396	87,398	155,907	138,558	202,726	291,828	76,210	76,179	27,496	179,895	23,978	1,009,791	985,913	316,106
1922	8246	47,685	79,376	150,618	113,449	198,404	294,078	135,908	33,444	23,738	192,390	41,782	925,360	893,598	182,670
1923	8338	25,455	67,412	109,358	121,337	202,117	320,031	120,438	21,890	18,110	160,488	51,100	897,020	845,920	203,488
1924	8085	26,537	66,348	112,808	124,499	210,315	338,345	102,814	24,642	19,852	147,304	34,495	913,348	878,833	195,708
1925	8070	13,707	65,798	101,448	127,145	218,073	373,991	95,552	25,301	19,181	141,134	39,686	939,848	900,162	223,936
1926	7978	19,361	68,568	101,385	185,925	229,864	387,948	93,605	23,783	28,092	145,390	44,005	987,066	943,051	249,107
Total	.....	408,975	631,387	956,235	1,085,074	1,690,737	2,797,084	724,515	339,198	189,447	1,252,356	296,131	7,815,613	7,619,482	2,006,953
Average	.....	45,442	70,154	106,248	115,208	187,859	310,787	80,502	37,688	20,838	139,150	32,903	868,401	846,609	232,984

All figures obtained from Annual Reports of Comptroller of Currency.

STABILIZATION OF PRICES

IMPORTANT INCOME AND BALANCE STATEMENT ITEMS AND RATIOS¹

(Date nearest June 30th)

	Loans in- cluding over- drafts and rediscunts	Bonds, etc.	Time de- posits	Demand deposits	Interest and discount earned	Total earnings	Ratio of discount on bor- rowed money plus inter- est on deposits to Interest and discount earned in per cent	Ratio of interest and discount earned to Discount on borrowed money and interest on deposits in per cent
1918	10,148,339	3,957,272	2,343,589	8,875,937	744,141	797,890	35.36%	283.00%
1919	11,024,359	5,051,928	2,784,940	9,106,192	845,592	910,760	37.11	269.00
1920	13,037,897	4,186,465	3,485,501	10,219,824	1,011,619	1,109,116	36.63	273.00
1921	12,243,802 ²	4,025,081	3,695,806	8,695,906	1,105,832	1,201,919	37.14	269.00
1922	11,248,214	4,543,325	4,111,951	9,152,415	955,451	1,067,268	35.77	280.00
1923	11,817,871	5,069,703	4,755,183	9,288,298	929,552	1,049,408	36.80	272.00
1924	11,978,738	5,142,828	5,259,923	9,593,450	965,876	1,074,559	37.78	265.00
1925	12,674,067	5,780,444	5,924,658	10,430,254	976,456	1,124,097	39.68	252.00
1926	12,417,874	5,842,253	6,318,809	10,778,803	1,046,992	1,192,218	38.94	257.00
Total	109,179,841	43,508,794	38,675,349	86,140,879	8,591,513	9,518,235		
Average ...	12,019,960	4,840,977	4,297,261	9,571,187	954,968	1,057,582	37.33	268.00

¹ 000 omitted first six columns.² Does not include overdrafts.Figures derived from Annual Reports of Comptroller of Currency. Calculations based upon data from same source.
Last two columns are calculations by the author.

PERCENTAGE RATIO OF IMPORTANT EXPENSE ITEMS TO NET EXPENSES FOR ALL NATIONAL BANKS

	Average 1918-1926	1918	1919	1920	1921	1922	1923	1924	1925	1926
Int. & disc. on borrowed money to net expenses	5.44%	3.49%	7.98%	10.00%	12.10%	5.40%	3.03%	3.02%	1.52%	2.05%
Taxes to net expenses	8.4	8.89	9.70	9.61	8.86	8.98	7.97	7.55	7.30	7.26
Net losses to net expenses	12.72	12.74	8.81	10.96	15.82	17.05	12.92	12.83	11.27	10.75
Other expenses to net expenses	13.77	13.83	13.76	13.42	13.04	12.84	14.34	14.14	14.12	14.41
Salaries & wages to net expenses	22.48	19.52	20.83	21.21	20.56	22.46	23.89	23.93	24.22	24.37
Int. on deposits to net expenses	37.2	41.54	38.84	34.79	29.49	33.28	37.83	38.50	41.54	41.13
Losses on loans & disc. to net expenses	9.63	5.81	5.29	3.78	7.83	15.30	14.23	11.70	10.61	9.93
Losses on bonds & securities to net expenses	4.51	7.59	4.15	7.47	7.72	3.79	2.59	2.90	2.81	2.52
Other losses to net expenses	2.50	2.24	2.60	2.60	2.79	2.68	2.14	2.26	2.13	2.97
All losses charged to net expenses	16.65	15.49	12.05	13.85	18.24	21.78	18.96	16.76	15.68	15.41
Recoveries to losses	23.51	17.78	26.10	19.56	12.84	21.74	31.85	23.42	28.07	30.26

All calculations based upon data contained in Annual Reports of Comptroller of Currency

We have a fairly constant difference between the price of the raw product and the refined sugar and a change in the latter is usually the result of a change in the former. To what extent is it possible to say that similar relationship exists between the price paid for accommodation at the central bank and the price charged for advances to clients? This question can be answered only after an examination of the costs of banking. Does the price paid for aid from the central bank play the same rôle in the costs of the bank as the price paid for wheat in the business of flour milling or for raw sugar in refining? If it does then we can answer our question with a simple affirmative. But we must remember that such a relationship can be admitted to exist only if the cost of borrowing on the part of the bank plays a predominantly important part in the total costs, a part so important that a rise in the rate charged by the central bank must be met by a rise in the rate charged to the clients of the bank in order to prevent loss on the part of the bank.

There is one other condition under which an influence might be attributed to the rate of the central bank. If the margin between earnings and expenses were very small and all the other costs in the banking business varied directly with the amount of business done, then a rise in the central bank rate, encroaching upon the straitened margin of profit, might result in a rise in the rate charged to new applicants. In order to determine the importance of the interest charge as a factor in bank costs and further the probability of the condition just stated, it is necessary at this point to undertake an analysis of costs. For this purpose we have taken the figures contained in the Report of the Comptroller for the nine years from 1918 to 1926 for national banks.

In analyzing these bank costs, we have adopted approximately the same classification as that of the Comptrollers' Reports which gives us six important groups of expenses, as follows, in the order of their quantitative importance, interest on deposits, salaries and wages, other expenses, net losses, taxes, and finally interest and discount on borrowed

money. Taking the totals for the nine year period, 1918-1926, and omitting 000, we get the following:

	<i>Amount</i>	<i>Per Cent of Total</i>
Interest on Deposits.....	2,797,084	37.20
Salaries and Wages.....	1,690,737	22.48
Other Expenses	1,035,074	13.77
Net Losses	956,235	12.72
Taxes	631,387	8.40
Interest and Discount on Borrowed Money...	408,975	5.44

See chart on next page for annual percentage ratios.

Our last and apparently least important item is the interest and discount on borrowed money. How an element which constitutes but 5.44 per cent of the cost of rendering a service can determine the price of that service is not in the class of self-evident truths.

By another angle of approach it is possible to determine the average cost of lending \$1,000.00 or the equivalent, namely, the investment of the same amount in bonds and securities. By far the greater part of the earnings of the average bank are derived from discount on notes and the interest from bonds and securities. However, the business of banking embraces other functions for which the bank receives remuneration which takes the form of commissions and profits in foreign exchange, insurance and security sales commissions, etc. It would, therefore, not be accurate to charge all the expenses incurred by the bank against its loan and investment business. We may assume that the earnings on loans and investments absorb a proportionate part of the total cost and if we abide by this assumption we establish the following proportion. Interest and discount are to total earnings as expenses chargeable to loan and investment functions of the bank are to total expenses. Interest and discounts for the nine year period, 1918-1926, for all national banks amounted to \$8,591,513,000 while total earnings amounted to \$9,518,235,000 and total expenses to \$7,519,482,000. Therefore, \$6,787,084,000 or 90.26 per cent of all expenses were chargeable to the loan and investment functions of the banks. This latter figure

Total Expenses					1918-26	1918	1919	1920	1921	1922	1923	1924	1925	1926
INTEREST ON DEPOSITS	%	37.20	41.54	38.84	34.79	29.49	33.28	37.83	33.50	41.54	41.13			
		22.48	19.52	20.83	21.21	20.56	22.46	23.89	23.93	24.22	24.37			
		13.77	13.83	13.76	13.42	13.04	12.84	14.34	14.14	14.12	14.41			
		12.72	12.74	8.81	10.96	15.82	17.05	12.92	12.83	11.27	10.75			
		8.40	8.89	9.70	9.61	8.86	8.98	7.97	7.55	7.30	7.26			
SALARIES AND WAGES					INTEREST AND DISCOUNT		TAXES		NET LOSSES		OTHER EXPENSES			
					7.45		12.10							
					1.49									
					5.40									
					2.95									

This table shows the percentage relation to net expenses of the various component elements of net expenses.

CHART 17

represents the costs to the banks of extending \$108,-179,461,000 of loans and discounts and making investments of \$43,568,794,000 in bonds and securities. It indicates that the *average* cost of extending \$1,000 of credit by the *average* national bank is \$44.77. This means that *on the average* every time a bank extends a thousand dollars of credit it pays out as costs

\$16.654	as interest on deposits
10.064	as salaries and wages
6.164	as miscellaneous expenses
5.694	as net losses
3.760	as taxes
2.435	as interest and discount on borrowed money

\$44.77 Total

The *average* national bank on its *average* advance of \$1000.00 earns \$56.63 which indicates an operating ratio of 79.057 per cent and net earnings of \$11.86.

Let us assume, for the purpose of calculation, what is a close approximation to the actual figure, that the average rate charged by Federal Reserve Banks for loans and rediscounts to member banks is $4\frac{1}{2}$ per cent. The above figure for gross earnings per \$1000.00 of loans by member banks indicates an average rate of 5.663 per cent charged by member banks to their own clients.

If these banks were able and inclined to do so what effect would various increases in the rate charged by the Federal Reserve Banks, if passed on to the clients of the member banks, have upon the rates paid by these borrowers? In other words, if the Federal Reserve rate had been 9 per cent instead of $4\frac{1}{2}$, by how much would the rate paid by the average borrower to the average national bank for the average \$1000.00 have been increased in order to compensate this average bank for the increased cost of doing business, an increased cost directly and solely attributable to a higher rediscount rate? An increase of $4\frac{1}{2}$ per cent in the rediscount rate would be exactly compensated as a cost by an increase of .2435% in the rate charged to

applicants by member banks. In other words, an increase from 5.663 per cent to 5.9065 per cent would allow the member banks to realize exactly the same profit on each \$1000.00 as before. The following table illustrates the relation between increases in the central bank rate and compensatory increases in rates charged to borrowers of other banks.

<i>Federal Reserve Bank Rate</i>	<i>Member Bank Rate</i>
4½ per cent	5.6630 per cent
9 " "	5.9065 " "
13½ " "	6.1490 " "
18 " "	6.3925 " "
22½ " "	6.6360 " "
27 " "	6.8795 " "
31½ " "	7.1220 " "
36 " "	7.3655 " "
40½ " "	7.6090 " "
45 " "	7.8525 " "
49½ " "	8.0960 " "
54 " "	8.3395 " "
58½ " "	8.5830 " "
63 " "	8.8265 " "
67½ " "	9.0700 " "
72 " "	9.3135 " "
76½ " "	9.5570 " "
81 " "	9.8005 " "
85½ " "	10.0440 " "
90 " "	10.2875 " "
94½	10.5310

This is a singularly fertile table of facts. It indicates that the average bank can compensate itself for a twentyfold increase in the burden of the discount rate charged by the central bank by adding a little less than 5 per cent to the rate normally charged to its own clients. Operating under average conditions prevailing over a nine year period it can raise its own interest rates to 10½%, by no means an exorbitant or, for most purposes, a prohibitive rate, and view with equanimity a rise to 94½ per cent in the central bank rate. We know that in some parts of the country the ordinary interest rate is in excess of 10½%. Perhaps the exposure of the relative unimportance of the Federal Reserve Bank rate as a banking cost may furnish the key to the enigma of a bank in the State of Alabama paying a rate of 87½ per cent to the Federal Reserve Bank of

Atlanta.⁴³ The rates charged to average applicants for loans in this state are well above the 10½ per cent postulated above.

Let us assume that there are limitations of law and tradition to prevent a rise in the interest rate to 10½ per cent or that Governor Miller of the Federal Reserve Bank of Kansas was correct when he said that the banks were already charging all that the traffic could bear and that an increase in the central bank rate could not be passed on to the ordinary borrower but would have to be absorbed by the banks which did the borrowing. How much could the margin of profit of the average bank during this period absorb before the business of banking would become unprofitable and a halt be called to further lending and further borrowing from the Federal Reserve Bank? The average net addition to profits of all the national banks for each year of this period 1918-1926 was \$222,983,666.66 which was 9.81 per cent of Capital and Surplus. Let us assume that 7.00 per cent constitutes a barely compensatory return and that 2.81 per cent is the margin which may be absorbed in higher rediscount charges without impairing capital equities in the banking business or unduly discouraging bank investors. How high can the central bank charges mount before they fracture this inviolable minimum of 7.00 per cent? This margin has averaged \$63,940,666.66 per year for our nine year period while the amount paid out by all the national banks per year for interest and discount on borrowed money was \$45,441,666.66. This would have permitted an increase in the average rate charged from 4.5 per cent to 10.8315 per cent. How radical an increase in rates this would have been we can appreciate by comparing it with the actual maximum average at any time during the existence of the Federal Reserve System, 6.5 per cent prevailing during 1921.⁴⁴ To seriously affect profits of banks then, in order to curtail loan expansion would have required

⁴³ *Interest Charges of Federal Reserve Banks*, Senate Document 291, 67th Congress, 4th Session, Jan. 16, 1923, p. 9.

⁴⁴ *Statistical Abstract*, 1925, p. 244.

not a "delicate touch" but rather herculean sledge hammer blows.

Our last hypothesis to the effect that all increases in the cost of borrowing by member banks from Federal Reserve Banks be absorbed by the banks themselves is contrary to our knowledge of the behavior of cost and price elements in a business situation. It is well known that many of these elements are not rigid and are capable of a flexibility which will yield to and absorb the pressure of other factors. An encroachment upon the profits of banking by increased discount rates would result in greater economy and opposition to the increase of other cost elements. We find, for example, that the banks allow substantial increases in salaries from 1918 to 1921 and make generous contributions to the Red Cross during the war years. It is highly probable that these items would not have been so large had the essential profit ratio of the banks been placed in jeopardy by radical increases in the rediscount rate. Furthermore, a general increase in the Federal Reserve Bank rate of the proportions here suggested would undoubtedly have received much publicity and enabled the banks to surmount the barriers of custom and tradition which might otherwise have prevented an increase in the charges made to their own clients. Assuming that one eighth of the increase in cost attributable to an increase in the rate of rediscount is cancelled by a corresponding economy in the other cost factors, that three eighths of such an increase in cost are charged to profits and that the remaining half is passed on to customers in the form of higher rates ⁴⁵ how high a central bank rate would be necessary to exhaust our surplus margin of profits and what would be the prevailing rate on customers' paper at that time? We also assume, as in our other calculations, that the banks borrow exactly the same amounts as they did under an average rate of $4\frac{1}{2}$ per cent. On these premises we find that an increase of the discount rate from an average during this period of $4\frac{1}{2}$ per cent to $21\frac{1}{2}$ per cent would have resulted

⁴⁵ This proportioning is purely arbitrary.

in a decrease of the average ratio of net profits to capital and surplus from 9.81 per cent to 7.00 per cent and an increase in the average rate charged to customers from 5.663 per cent to 6.123 per cent. Would such an increase of .46 per cent in the rate on customers' loans have had any appreciable effect upon borrowing and consequent business activity provided other conditions afforded business the same prospects of ability to repay? There is every reason to doubt that such an increase would have had any physically deterrent influence. That such high rates on bankers' loans would have had distinct inhibitory effects because of psychological factors may be freely conceded but our purpose at this particular point is to combat the cost theory of central bank rate control and this theory does not take into account the elements of fear and leadership. Once you admit these as decisive factors it is necessary to abandon a mechanical cost formula as the means of stabilizing prices and business.

The chart on the following page illustrates the three hypotheses which we have just developed.

1. The situation where the increased cost of borrowing from the central bank is passed on in its entirety to the borrowing customers of the member banks. The changes in the central bank rate would have to be so radical in order to have any material effect upon the rates charged by member bank as to preclude any possible control. Under such conditions the project to control member bank rates to clients would be as ambitious as the attempt to control the price of food in first class hotels by regulating the price of salt.
2. If the entire increase in the cost of rediscounting were charged to profits and none of it passed on to borrowers we would find the 7 per cent net profit ratio abridged as soon as the rediscount rate exceeded $10\frac{1}{2}$ per cent. We may make some progress here by taking three series for which we have accurate figures and comparing them for the nine year period from 1918 to 1926. These three series are "Net Addition to Profits for Year," "Ratio of Net Profit to Capital and Surplus" and "Interest and Discount on Borrowed Money."

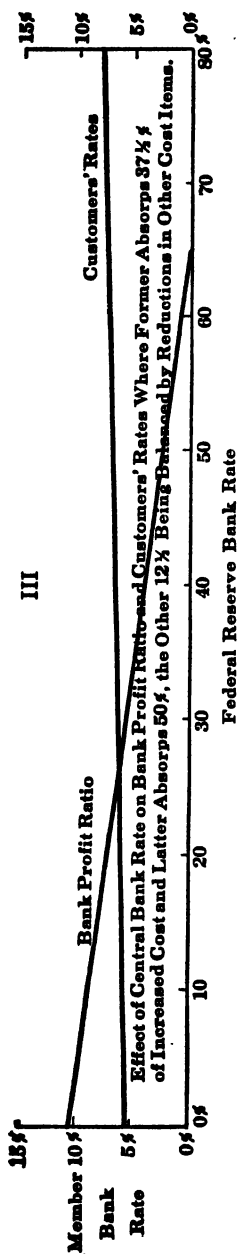
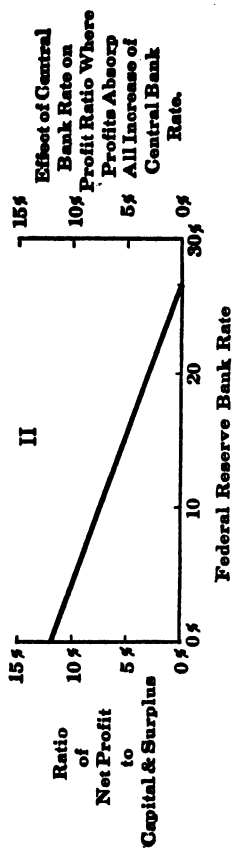
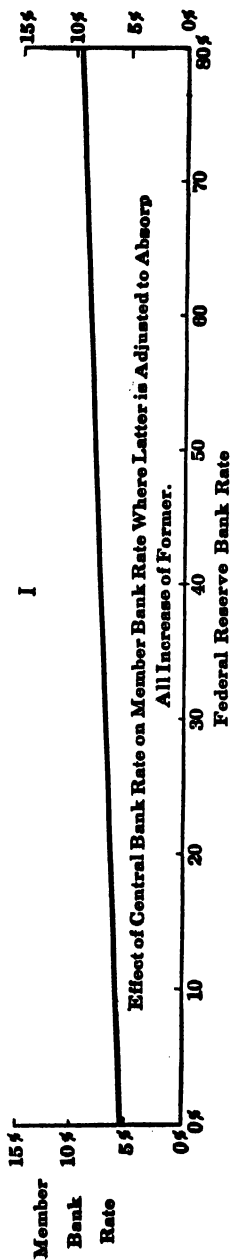
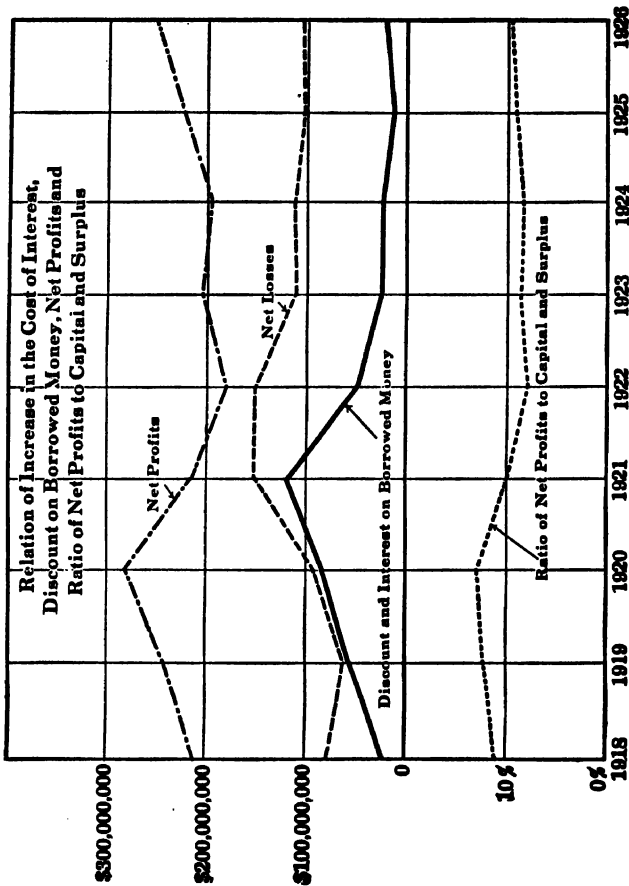


CHART 18

	<i>Net Addition to Profits for Year</i>	<i>Ratio of Net Profit to Capital and Surplus</i>	<i>Interest and Discount on Borrowed Money</i>
1918	212,332	11.09%	20,380
1919	240,366	12.11	53,504
1920	282,083	12.78	82,720
1921	216,106	9.40	119,396
1922	183,670	7.79	47,685
1923	203,488	8.48	25,685
1924	195,706	8.11	26,537
1925	223,935	9.00	13,707
1926	249,167	9.54	19,361
Average	222,983 **	9.81	45,441 **

In the two years in which the profit ratio is highest the interest and discount on borrowed money are well above the average. In the year in which the interest and discount is at its highest as a cost item the ratio of profit to capital and surplus is 9.40 per cent, a little less than the average, but well above the ratio for the next four years during which the cost of borrowing money from the Federal Reserve Banks is less than one quarter of what it was in 1921. Like the ratio of Net Profits to Capital and Surplus the Net Addition to Profits for the year attains its maximum during 1920 during which Interest and Discount, with the exception of one year, also reaches its highest point. Taking the years 1921 and 1925 during which this item reaches its maximum and minimum points respectively, we find that in the year of greatest cost, 1921, net addition to profits are \$216,106,000 and the ratio of net profits to capital and surplus is 9.40 per cent while in the year of minimum cost 1925, these two items are respectively \$223,935,000 and 9.00 per cent. There is little reason for believing then that an increase in the central bank rate results in a diminution of bank profits and some reason for believing that just the contrary is true, i.e., years of high cost on account of interest and discount on borrowed money are also years of excellent profits and high profit ratios. We may say, therefore, that our second hypothesis is not sustained by experience. That the maxima of our three series do not coincide may

** 000 omitted.

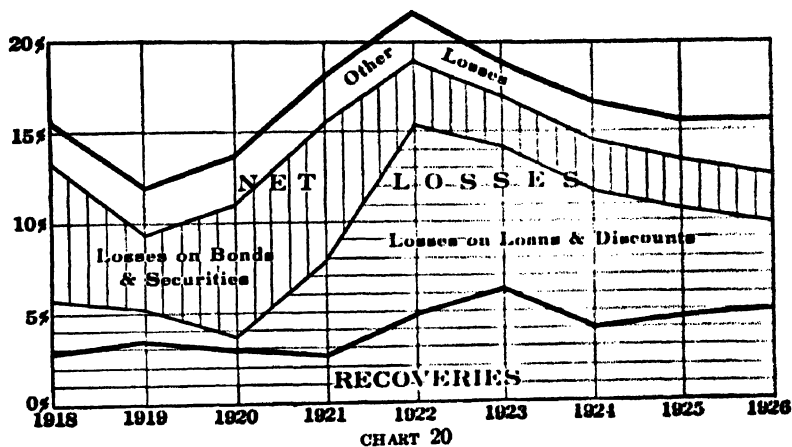


All Calculations are based upon data contained in the Annual Reports of the Comptroller of the Currency

CHART 19

be explained by the fact that the year of highest interest and discount charges was also the year of maximum net losses. In fact, the inability of customers that year to repay

Ratio of Losses and Recoveries to Net Expenses



	Total Losses to Net Expenses	Losses on Loans and Discounts to Net Expenses	Losses on Bonds and Securities to Net Ex- penses	Other Losses to Net Ex- penses	Recoveries to Losses
1918 ...	15.49%	5.81%	7.59%	2.24%	17.78%
1919 ...	12.05	5.29	4.15	2.60	26.10
1920 ...	13.85	3.78	7.47	2.60	19.56
1921 ...	18.24	7.83	7.72	2.79	12.84
1922 ...	21.78	15.30	3.79	2.68	21.74
1923 ...	18.96	14.23	2.59	2.14	31.85
1924 ...	16.76	11.70	2.80	2.26	23.42
1925 ...	15.68	10.61	2.81	2.13	28.07
1926 ...	15.41	9.93	2.52	2.97	30.26
Average.	16.65	9.63	4.51	2.50	23.51

All calculations are based upon data contained in the Annual Reports of the Comptroller of the Currency.

the banks for money borrowed was a more substantial cost item than the interest and discount charges, the latter being \$119,396,000 as compared to \$155,907,000 for the former. The failure of our peaks to coincide does not invalidate the statement made above that increases in interest and discount charges are accompanied by increases in profits. If we take gross earnings instead of net addition to

profits or profit ratios, we find our maximum in 1921, instead of in 1920.

3. In our third hypothesis we distribute the burden of higher interest charges on borrowed money between other cost elements, bank profits and customers' rates, with the result that it bears less heavily on either than when we concentrate the total burden on the one or the other. If a concentration of the burden gives no justification for a confidence in the efficacy of the rediscount rate as an instrument of control then a division of the burden should give even less.

Taking up the third question raised on page 301, let us ignore for the time being the arguments of the preceding pages and assume that the central bank dominates the banks of the country to such an extent that it can dictate the rates of interest to be charged to all borrowers at banks. Will such a control actually govern the interest rate in the country and make possible the determination of the price level and the consequent stabilization of business?

In the first place, there is much reason to believe that a rise in the interest charged by banks far from diminishing the relative amount of speculation in the country would tend actually to aggravate it. It is a truism in business that conservatism goes hand in hand with moderate margins and moderate profits. It is the Wallingfords who "take a chance" in the hope of attaining affluence. The latter are not interested in the slow accumulation of wealth based upon fractional returns but seek immediate fortunes based upon multifold returns. Keeping in mind the marginal principle of the cost theorists in accordance with which an increase in the "price" paid for money will reduce the demand for money by excluding marginal borrowers we may well ask ourselves if these marginal borrowers are likely to consist of those elements who provide the fever of speculation during the business cycle or whether they are more likely to be the stable elements whose influence is ever directed toward safety and the maintenance of the ship of business on an even keel? We are not likely to find many speculators

working on fractional percentage margins.⁴⁷ We are likely to find many conservative business men operating on fractional percentage margins. There is every probability, therefore, that a rise of several per cent in the interest rate will bar marginal borrowers who are precisely the ones whom we can least afford to exclude and will fail to a very large extent in affecting the particular elements whom the rise in the interest rate was intended to check. As a cure for speculation, therefore, radical changes in the interest rate is an expedient of extremely doubtful value.

In the second place, the interest rate is not the purely artificial price element that our mechanical formula advocates would have us believe. It is the result of a highly complicated process of community evaluation. No reputable economist has ever urged or defended the proposition that the state determines the community rate of interest. The state through its control over the banking system of the country can influence the rate of interest but it is hardly necessary to point out that influencing the rate of interest and controlling the rate of interest are not identical propositions. To illustrate the difficulty involved in the above assumption we may consider briefly the three most common explanations of interest. We shall refer to these as the supply and demand theory, the productivity theory and the time preference theory.

The first of these holds that money is like any other commodity, that an increase in the supply relative to the demand will reduce the price, i.e., the interest rate, while a decrease in the supply will raise the price.⁴⁸ The advocates of this theory point to the fluctuations in the rate for call money and on short time loans in the large money centers. When thus confined the theory has a limited validity but as a general explanation of the interest rate it is

⁴⁷ This view finds support in the work of Owens and Hardy, *Interest Rates and Stock Speculation*, Institute of Economics, The Macmillan Company, New York, 1925, pp. 112-124.

⁴⁸ This is a crude theory of interest and is held by few economists to-day. As held it relates chiefly to what Professor Fetter calls "Physical capital goods."

characterized by what we may call inverse inaccuracy. By this we mean that an increase in the quantity of money as a general rule far from decreasing the interest rate actually causes it to rise, and a decline in the quantity instead of forcing interest rates upward has just exactly the opposite effect. We know that a sustained increase in the media of exchange, other things being equal, causes an increase in prices. We do not know how much of an increase is necessary to increase prices. Our social and economic machinery offers considerable friction which we have not yet learned to calculate and compensate. Nor are we able to say how long it will take after an increase in the media of payment before a rise in the price level will be evident. But keeping these limitations in mind, we may say that an increase in the quantity of money relative to the supply, will sooner or later cause some increase in prices. If prices increase, the value of each unit of money will decline. Thus if Brown lends White \$100.00 at the beginning of the year which White promises to repay at the end of the year Brown will receive a sum which tallies exactly with that which he loaned but which upon being converted into goods and services does not bring as much to him as the same number of dollars would have procured at the beginning of the year. This phenomenon will slowly penetrate the collective consciousness of the community and the average borrower will discover when he approaches the average lender that the latter expects some compensation for the anticipated decrease in the purchasing power of the money to be loaned. This compensation will take the form of an increase in the interest rate. So we find that an increase in the supply of money has actually resulted in an increase in the rate of interest. The same logic of course applies when we are reducing the quantity of money. Now, if the state, in accordance with the supply and demand theory of interest, undertakes to restrict loans by raising the interest rate, it will find itself in a very perplexing position. We shall omit for the time being the collateral problem of the control of the quantity of credit and cur-

rency available to the country and assume that the state has in some way been able to achieve this control. If it now undertakes to raise the interest rate by restricting the supply of instruments of payment, it is very likely that just the opposite will result. Of course this argument is leading us into absurdities, but the whole point is that the thinkers who have advanced the supply and demand explanation of interest rates have postulated the interest rate as an effect whereas the advocates of a control of the price level through the interest rate have started with the latter as the cause. Is the interest rate of the community a cause or an effect of price factors? It obviously cannot be both cause and effect, mutually, reciprocally and to the same extent and at the same time for this would be the ultimate of self-generation. The interest theory just discussed assumes the interest rate as an effect, incorrectly, except under certain limited conditions.

The productivity theory explains the rate of interest as the result of the productivity of the funds on which it is calculated. If the opportunities for the profitable use of funds are abundant, the rate will be high, but if the returns attributable to the borrowed capital are low, then the rate paid for it must be low. This theory, of course, omits the many cases where money is borrowed for no productive purpose, to pay a fine, a gambling debt or for the many cases where the purpose for which the money was borrowed was not realized or was mistaken. We are using the term "productive" here in the entrepreneurial sense for even the payment of fines and gambling debts does procure some relief and some satisfaction to the payer and hence is psychically productive. Without pursuing this controversial theory any further at this point it may suffice to say that it assumes the interest rate as an effect of the investment opportunities rather than a cause of the extent of these opportunities.

The time preference theory starts with the premise that a present good or service is more valuable than the same good or service available at some time in the future. This

difference in value is the result of multitudes of subjective preferences very few of which can be related to the discount policy of the central bank. These preferences are the result of hope and fear. If we are confident that the future will provide for our needs, we will tend to consume all our present goods and we will esteem the latter so much more highly than future goods that it will require a considerable premium to induce us to part with any goods which we have to-day in return for others tomorrow. Fear may influence our rate through inducing us to provide for the future by abstaining from the complete consumption of present goods and when directed toward the ability of others to reproduce the goods which we have loaned, it will lead us to insist on a greater agio to compensate for what we consider the greater risk. These causal factors are metaphysical magnitudes and it is difficult to see how the interest rate set by the bank can control them.

Practically, a rise in the interest rate charged by banks would result in an increasing use of substitutes. There would be more direct lending between individuals, more manufacturers would carry their customers, more enterprises would borrow by floating securities, etc. The bank interest rate at the most applies to only a small part of the total amount of credit used. Taking Carl Snyder's estimates ⁴⁹ we may assume that 120 to 130 billions of dollars is loaned from one class of people to another in the United States and that from 25 to 30 billions of this is loaned by banks. An attempt to raise this rate substantially above the community rate would result in wholesale substitutions.

Furthermore, there is a distinct limitation of another kind to an increase in the interest rate. A rise in the community rate has a depressing effect upon the value of durative goods. It is a commonplace that a bond bearing a yield of \$5.00 a year will sell for \$100.00 if the market rate coincides with the rate on the bond. If the market rate rises to 10% the true price of a bond paying \$5.00 a year would be

⁴⁹ *Business Cycles and Measurements*, pp. 206-207.

\$50.00. It requires but a suggestion to conjure up the political reaction of a radical and deliberate rise in the interest rate when such a rise is followed by an alarming drop in the price of government bonds, federal, state, and municipal.

Our answer to the third question as to the effect of the control of the interest rates charged by member banks on the price level is fourfold.

In the first place, an intelligent solicitude for popularity and political favor must prevent the central bank from freely manipulating the rate in accordance with the exigencies of the price situation.

In the second place, such a rate would apply at the most to less than one quarter of all money borrowed and substitutes for bank borrowing are at hand to which resort would be had as soon as the bank rate rose appreciably above the natural market rate. The latter sends its rootlets into millions of pockets of emotional soil which are not susceptible to arbitrary or deliberate cultivation by any central authority.

In the third place, due to the metaphysical character of the substance which has given it life and continues to nourish it, the interest rate insofar as it is a price would be infinitely more difficult to regulate than the price of wheat or any other material commodity. The experience of many governments during the last decade offers eloquent testimony to the difficulty of attempting to maintain a price which is out of harmony with the natural market price. Nothing short of a predominant control of the supply can achieve this, and such a monopoly of credit is scarcely conceivable.

Finally, interest charges on borrowed money constitute such a small part of the total expenses of the average enterprise that it is difficult to see how they can influence, substantially, the commitments which a business man is willing to make provided other factors are favorable. We are apt to think that banking costs are predominantly interest costs if we take into account the interest paid on deposits. But

here also an examination of the facts dispels the illusion. Over our nine year period the interest and discount on borrowed money plus the interest paid on deposits averages 42.62 per cent of net expenses which is less than one half the total expenses in a business in which it is likely to be the maximum proportion of the total.

Our conclusion then is that the interest rate is not controlled by the central bank. If it could be controlled it could move only within a comparatively narrow range due to influences over which the central bank authorities have little or no control. Finally, as a cost factor in banking and more so in other lines, it plays such a negligible part in total cost as to deprive it of any substantial influence over business expansion or contraction or the fluctuations of the price level.

CHAPTER XXIII

CENTRAL BANK RATES, BORROWED RESERVES AND BANK EXPANSION

The Issue—Multiplying a Loan from the Central Bank—Division of Opinion—View of Professor Phillips—His Premises—Distinction Between Primary and Derivative Deposits—Distinction Examined—Ratio of Derivative Deposits to Loans—Capital and Commercial Loans—Estimates of Deposit Ratio—Orbit of Check Circulation—Proportion Passing Through Clearing Operation—Description of Method—Procedure Summarized—Result for Five Year Period—Two Other Methods—Conclusions as to Proportion Passing Through Clearing Operation—Expansion on Basis of New Premises—Primary, Secondary and Subsequent Expansions—Coefficients of Expansion—Passive Role of Bank and Importance of Community Will—Theoretical Possibilities Versus "Laws"—Coefficients Modified to Account for Cash—Caution as to Bank Profits—Bank Expansion and the Discount Rate.

Of vital significance in the appraisal of the power of the rediscount rate to influence and control expansion is the ability of a bank to multiply its loans on the basis of a given advance from the central bank. On this point there has been a sharp clash of opinion, one group maintaining that a given increase of central bank credit may result ultimately in a tenfold expansion for the system but to the immediate beneficiary of such accommodation no such expansion is possible, while another group containing men experienced in the practical administration of banks as well as in the academic exposition of their functions maintains that a bank can expand a given advance from the reserve bank four or five times in the form of credit to its own clients.

In their work "*Banking Practice*," L. H. Langston of the National City Bank of New York and N. R. Whitney, Professor of Finance of the University of Cincinnati say,

"The possibility of manufacturing credit, or,—of giving to a considerable number of persons the right to use the same funds, is the chief source of profit for the bank. The limits of the bank's

power to manufacture credit are fixed by its possibilities with respect to a cash reserve."¹

In a balance sheet illustration they show an expansion of a bank's credit to five times the amount of established reserves.²

Mr. W. H. Kniffin, Vice-President of the Bank of Rockville Centre, L. I., N. Y. in his book on *American Banking Practice* states that there are two basic principles underlying banking operations,

"(a) That a dollar in money will support from four to ten dollars in credit; and (b) that a great part of bank deposits arises out of the proceeds of loans."³

"For every dollar in money in hand it may expand its debts about ten times."⁴

"Suppose it has been found that a reserve of 10 per cent is sufficient to carry the operations of the bank day by day. Therefore for every dollar the bank receives in cash, it may *create deposits from loans*, and while it may pay interest on one dollar, it draws interest on ten. *Banks expand and contract their loans according to the amount of reserve held*; and their deposits and loans therefore move up and down together."⁵

The Commission of Agricultural Inquiry in its report on Credit referring to the above possibility states,

"In fact, a loan by a Federal reserve bank to a country member bank in the form of a deposit credit forms the reserve basis for additional deposit loans by that member bank to its customers in amounts averaging about fourteen times the amount which it borrowed from the Federal reserve bank. Allowing for the fact, however, that about one-sixth of the customers' borrowing will ordinarily be required in notes, which the member bank will have to withdraw from the reserve bank, the expansive quality of a reserve deposit created by a loan or discount, in the case of a

¹ L. H. Langston and N. R. Whitney, *Banking Practice*, Ronald Press, N. Y., p. 252.

² *Ibid.*, p. 46.

³ W. H. Kniffin, *American Banking Practice*, McGraw-Hill Book Co., New York, 1921, p. 9.

⁴ *Idem.*

⁵ *Ibid.*, p. 10. The italics are Kniffin's.

country member bank, would be about four and one-half instead of about fourteen, times the amount of the reserve deposit." *

A similar view is expressed by Agger⁷ and Professor Phillips refers to this as the traditional view previously expressed by White⁸ and Macleod.⁹ There is therefore some sanction in authority for the supposition that a bank may expand its own loans by several times the amount of the advance which it receives from its own reserve bank.

Willis and Edwards¹⁰ on the other hand state that,

"Perception of this fact has led some hasty thinkers to suggest that under a central banking system an advance in the rate of rediscount would not affect the commercial rate at all or only in a negligible way, since it would have to be raised several per cent to produce any noticeable change in interest rates among actual loans to customers."

Professor Westerfield develops a theory of the diffusion of cash among the banks in the system somewhat similar to that of Professor Phillips although he is more liberal in acknowledging exceptions.¹¹

He offers no exhaustive analysis of the problem but does point to the likelihood of an increasingly unfavorable clearing house balance should a single bank in a system attempt to expand more than other members in the same system.

The most ambitious attempt so far made to dis-establish the traditional theory of bank expansion is that of Professor C. A. Phillips.¹²

* *Report of the Joint Commission of Agricultural Inquiry, Credit, Report No. 408, 67th Congress, 1st Session, p. 18.*

⁷ *Organized Banking*, E. E. Agger, Henry Holt and Co., New York, 1918, pp. 31-33.

⁸ Horace White, *Money and Banking*, Fifth Edition, Ginn & Company, Boston, 1914, pp. 194-196.

⁹ Henry Dunning MacLeod, *Theory and Practice of Banking*, Fifth Edition, Vol. 1, p. 324.

¹⁰ H. Parker Willis and George W. Edwards, *Banking and Business*, Harper and Brothers, N. Y. and London, 1922, p. 195.

¹¹ Ray B. Westerfield, *Banking Principles and Practice*, 5 Volumes, Volume III, p. 77, Ronald Press, N. Y., 1921.

¹² Chester A. Phillips, *Bank Credit*, The Macmillan Company, New York, 1921 pp. 32-74; *Theoretical Considerations Bearing on the Control of Bank*

He contends that it is not true that a loan of \$1000.00 from a Federal reserve bank by a member bank will enable the member bank to expand its own loans by an amount ten times as great. Such a bank would immediately be confronted by an unfavorable clearing balance which would eliminate such a possibility. While it is true that the borrower in drawing on his account sometimes pays other depositors of the same bank and that some of the amount borrowed remains on deposit nevertheless for

“every dollar that a typical American bank lends, it loses not less than eighty cents through direct cash withdrawals by borrowers and through unfavorable clearing balances. In other words, the typical banker is able to lend approximately \$1.25 for each \$1.00 borrowed. It follows that rediscount rates roughly equal to the market rates (if the expense of carrying on the banking business is considered) will ordinarily be sufficiently high to serve as a check on borrowing member banks.”¹⁸

While a borrowed reserve may support manifold loans in the banking system it does not support manifold loans for the individual bank because each bank loses 80 per cent of its loans to other banks which other banks, finding themselves in possession of a new reserve, are able to extend new loans to the amount of approximately \$1.10 for every \$1.00 of deposited reserve. He makes a distinction between deposited reserves and borrowed reserves, the latter permitting a higher ratio of loans than the former since a cash deposit gives rise to a liability against which a reserve must be kept whereas the bank is not required to maintain a reserve against the liability which is the result of a loan from the Federal Reserve Bank.

Even in a period of general loan expansion it is impossible, according to Phillips, for any one bank to make manifold loans on the basis of a given amount of borrowing. The author distinguishes between lending power based

Credit Under the Operation of the Federal Reserve System, The Annals of the American Academy of Political and Social Science, Jan. 1922, pp. 195-199.

¹⁸ *Ibid.*, p. 196.

upon borrowed funds and lending power based upon the checks of depositors which are the result of the lending operations of other banks. The amount that a member bank borrows does not affect the amount that other banks lend, or the amount that the borrowing bank will receive as the result of the lending operations of other banks.¹⁴

"If within a credit area where all member banks are borrowing and expanding their loans, one institution suddenly ceases to borrow, the stream of increasing deposits flowing from the expanding banks will tend to continue to swell the deposits and, therefore, the lending power of that bank that has ceased to borrow. A resumption of borrowing by the exceptional bank will enhance the lending power of that bank by an amount only slightly in excess of the amount borrowed."¹⁵

Phillips holds that when the distinction between the two sources of lending power is made the "persistent contention" of manifold loans "loses its semblance of validity."¹⁶ The logical corollary of this proposition is that the rediscount rate is a potent weapon of credit control and such a role for it the author urges and defends.

In passing it may be remarked that Professor Phillips fails to account clearly for one factor which would have helped his case considerably—the withdrawal of cash from a bank for current use in the community as the result of an increase in loans. Since this constitutes about one sixth of the amount,¹⁷ both checks and cash, withdrawn from a bank, its omission has impaired the effectiveness of his demonstration.

If we grant the premises of Professor Phillips his conclusions are valid. Before proceeding to an examination of these premises the writer wishes to acknowledge the substantial contribution to the theory of credit expansion which Professor Phillips has made. The current explanation of credit expansion is unduly naive and not entirely accurate. Professor Phillips has performed a valuable

¹⁴ *Ibid.*, p. 197.

¹⁵ *Ibid.*, pp. 197-198.

¹⁶ *Ibid.*, p. 198.

¹⁷ *Report of Joint Commission of Agricultural Inquiry*, op. cit., p. 18.

service in showing the inadequacy of this exposition. While the writer will, at times, question seriously the premises and reasoning with which Phillips criticizes the traditional theory it must not be assumed that he disparages the work which has been done. He proposes to build upon the foundations laid by Phillips and to carry the construction one stage further. While modifying the base upon which the edifice of theory rests he does so, nevertheless, in the full confidence that the substructure is essentially sound. The architect of this foundation is Professor Phillips and a sense of fairness demands this recognition of indebtedness from those who build upon it.

The orthodox explanation of credit expansion would lead the uninitiated to expect that the limiting factor in expansion is the volume of reserves and that the average bank on securing an increase in reserves of any stated amount can immediately and in some mysteriously automatic fashion increase its loans and deposits by a multiple of that amount determined by the legal ratio of deposits to reserves. Phillips shows that such a simple procedure is not open to the average bank. The attempt to expand loans in this fashion would lead to an unfavorable clearing balance which could not be offset by incoming checks on other banks since there is no direct relation between the stream of checks drawn on other banks and the expansion of the bank in question. As a result the newly acquired reserves would be quickly exhausted and additional resort to the central bank would be necessary to provide reserves and clearing house balances. Professor Phillips contends that the expansive possibilities of a loan from the central bank are not much greater than the loan itself and rests this contention upon three premises, which it is the purpose of this paper to examine.

The first of these is that there are two kinds of demand deposits, one arising from a direct lodgment of cash or checks drawn on other banks and the other arising from loans which the bank makes, being in fact, the proceeds of those loans. The first type of deposit is relatively stable,

The second type, i.e., that which is the result of a loan by the bank which holds it, is quickly exhausted or reduced to a minimum and remains at a low point during the life of the loan, being replenished shortly before the loan comes due.¹⁸ Phillips devotes much more attention to a demonstration of the instability of the latter than to the stability of the former.

His second premise is that the average of deposits which result from loans does not exceed twenty per cent of the loans.¹⁹ While total loans and deposits of a bank or a system of banks usually move together it by no means follows that the proceeds of bank loans are left entirely on deposit in the identical banks which made the loans. This would require the conclusion that clients do not use the credit which they secure from their banks or that they are always careful to pay their checks only to other depositors of the same banks. Neither conclusion is reasonable and we may therefore agree with Phillips that a large part of the proceeds of a given loan are withdrawn. How much this is we do not know. Such evidence as is available will be considered at a later point in this paper.

The third and perhaps weakest premise of Phillips is that 99 per cent of all checks drawn on a bank by borrowers pass through some clearing operation; the other 1 per cent, presented by other depositors of the same bank, is negligible.²⁰

We shall now proceed to a consideration of each of these postulates and having imposed certain modifications we shall develop a theory of credit expansion suggested by the procedure of Professor Phillips.

Let us consider the first premise in which he attempts to make a distinction between primary and derivative deposits. A derivative deposit is one which arises "directly from a loan or which is accumulated by a borrower in anticipation of the repayment of a loan."²¹ "A primary deposit may be defined as one that rises from the actual

¹⁸ *Bank Credit*, op. cit., pp. 40 and 43.

¹⁹ *Ibid.*, p. 42.

²⁰ *Ibid.*, p. 38.

²¹ *Ibid.*, p. 40.

lodgment in a bank of cash or its readily convertible equivalent such as checks drawn on other banks, but not made in anticipation of the repayment of a loan." ²²

A primary deposit consisting of funds deposited with the bank for safekeeping and to be currently drawn upon as well as replenished, is relatively stable. Contrasted to this we have the conventional course of the derivative deposit. The proceeds of the loan are credited to the account of the successful applicant. He immediately draws against it for the purpose which caused the loan. This results in a rapid if not immediate exhaustion of the account modified only by the limitations as to minimum balances upon which the loan was conditional. Throughout the life of the loan the borrower's account remains at a low point. More or less gradually before the loan is due a balance is accumulated for the purpose. On the due date this balance is wiped out in the payment of the loan. Phillips contends that a primary deposit does not behave in this fashion but is on the contrary quite stable.

This distinction based upon the instability of the derivative deposit can scarcely be sustained. Granting that many accounts which result from loans, do conform to the description above, is it true that primary deposits do not exhibit similar peculiarities? Much depends upon the nature of the income which results in primary deposits, whether it is the result of profits, salaries, fixed incomes such as rents, interest payments and dividends, commissions, etc. Much depends also upon the spending habits of the recipients. Take the income of the business man. Where the flow of profits comes in an even stream and the individual lives within his means and buys the necessities of life for himself and family only after he has acquired the requisite balance his account may be fairly stable, particularly if he is a cautious individual and always keeps a reserve on hand for an emergency. On the other hand he may not be a person of this kind and his business may be seasonal, yielding a year's income within a fairly short

²² *Idem.*

period which may be spent evenly throughout the year. In such case it will display the characteristics attributed to the primary deposit by Phillips. On the other hand it may be used to pay accounts which have accumulated during the year thus manifesting precisely the same instability which was supposed to be the distinguishing and peculiar trait of the derivative deposit.

We may take the case of the average farmer of the South, the West or the East. He raises a special cash crop which he markets once a year, the proceeds of which will enable him to "clean up." For this day he lives—and so do his creditors. In unfortunately too many cases the anticipated market yield has been spent long before it is realized and when the crop is finally sold and the farmer has his check in hand he looks at it for one fleeting moment, drives to the bank, establishes a formidable if ephemeral "primary deposit" which in the course of the next few days or weeks melts away in the heat of accumulated bills. What difference is there between this sort of a deposit and a derivative deposit which is developed in anticipation of the maturity of a bank loan? There is none except in the character of the obligation to be discharged. In the first case credit has been established on an open account. In the second the farmer has borrowed from the bank and paid his bills immediately. When the annual cash income is realized the farmer pays his trade creditors in the first case while in the second he pays his bank. In both cases we have a rapid exhaustion of the account and as far as the ability of the bank to make other loans is concerned there is no difference. The assumption which would contradict this conclusion is one in which the farmer acquires a substantial balance, the result of the sale of his crop, and then spends it gradually throughout the year. This assumes a credit position and a degree of prosperity for the average farmer which are not supported by the facts.

What is true of the farmer is true of many others. Where income flows in an even stream it is the exception rather than the rule. It is a matter of common knowledge not

only to the economist but to the layman that almost every line of business has its seasonal fluctuations and therefore its periods of maximum income with great activity and of low income with relative inactivity. Wherever the individual allows his debts to pile up for the day when "his ship comes in" and he may be purged of his obligations his primary deposits are going to act in exactly the same fashion as though he had borrowed from the bank. In fact the only difference is that the bank is the creditor in the one case and a group of individuals or commercial houses in the other.

The case of the salaried man or the man who is the recipient of a steady income from trust funds or invested capital may seem to offer deposit accounts which conform to the stability which Phillips has postulated for the primary deposit. By no means is this necessarily the case. The salaried man has his monthly rent to pay, the installment on his car, his radio, and his refrigerator. His mail about the first of the month is characteristic and he complains that he has writer's cramp from signing checks. If he is conservative he will retain a balance for current needs which must be met during the month and for emergencies. It is only this small balance which conforms to the definition of the primary deposit. What is true of the salaried man is true of the man whose income consists of other forms of periodic contractual payments. There is no intrinsic difference between the deposits which result from such income as the foregoing and the deposits which are the proceeds of bank loans. In the latter case the bank provides the credit which makes deferred payment possible. In the former the tradesman provides it. The liquidation of both types of obligation causes abrupt impoverishment of bank balances.

It may be argued that many individuals do not spend their entire incomes and have a surplus which they permit to accumulate and that such accounts exhibit the qualities which Phillips has attributed to the primary deposit. This argument is not valid. Such individuals also have their

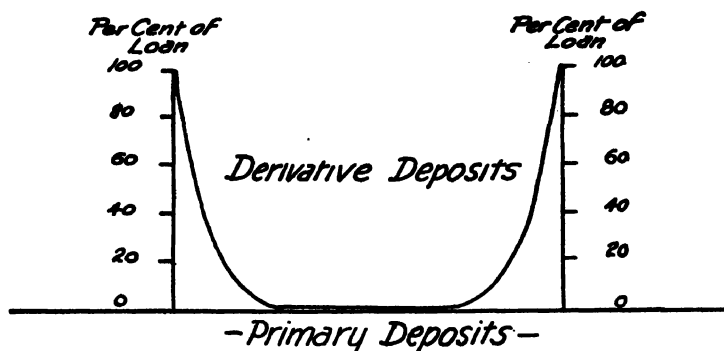
bills to pay. As these obligations are met periodically the accounts fluctuate accordingly and if there is a certain amount left after normal current obligations have been provided for, over and above what they are expected to keep to compensate the bank for carrying their account, such a balance will not remain unused for any length of time. Bank credit exists to be used and unless the instinct of miserliness is more widespread than we suppose and can, furthermore, be sustained by the mere size of a bank balance no individual or concern will permit such credits to accumulate. With many more attractive opportunities for investment a continuing unused balance will be withdrawn and invested. In such cases an account shows gradual accretions and then a sudden depletion for investment purposes. The essence of commercial banking is the purchase by the depositor of the right to receive payment from the bank on demand. Since, ordinarily, the amount which may be so demanded is only equal to the amount which was paid for this right, the only consideration which the bank offers is the certainty of payment and the facility of payment. If an individual permits a balance to accumulate beyond his current needs and remain in the bank for any length of time he is not managing his affairs with ordinary regard for his own pecuniary interests. When such self-interest causes him to withdraw his excess balance it has precisely the same effect on his account as though he were paying a bank loan.

On the other hand one may question the accuracy of the description of the average derivative deposit which Professor Phillips gives. The graph of this account is a trough with rather steep sides and a flat bottom.²³ One side represents the account immediately after the loan is granted. The steepness of the side indicates the rapidity with which the account is reduced. The broad flat bottom shows the account during the greater part of the life of the loan and according to Professor Phillips is never more than 20 per cent and usually much less.²⁴ The far side of the

²³ *Ibid.*, p. 43.

²⁴ *Ibid.*, p. 45.

trough is likewise steep and shows the accumulation in anticipation of repayment.



The picture is unduly conventional. The underlying philosophy of commercial banking is that the credit of the institution should be used to facilitate the processes of production and distribution. It should assist the flow of goods from the producer to the consumer. The mill operator borrows to purchase raw materials. As these are developed into more finished products they are passed on. Payments are made, and, presumably, deposited in the bank by the borrower. When the goods have all passed out into the channels of distribution the proceeds are intended to enable the borrower to pay off his debt to the bank and have a margin left for his own costs and profit. The conventionalized illustration above assumes that the finished products pass on at the same time or within a short space of time and are all paid for at or near the end of the period. Undoubtedly some transactions do manifest such characteristics but no one has yet discovered what proportion of the total they constitute and Phillips appears to think that most transactions are of this nature. It may be true to a large extent of brokers, jobbers, importers and exporters who borrow to purchase large specific lots which on being sold allow them to pay for the accommodation which the bank extended. The financing of retail distribution and of manufacturing would be just the opposite. The retailer bor-

rows to lay in a certain stock. As it is sold he accumulates a balance at the bank which he uses to pay his debt to the bank. There is no reason why he should defer his deposits or persuade his customers to wait with their purchases until the end of the month because that is the time his note comes due. The textile manufacturer and the miller both find it to their advantage to lay in large supplies at harvest time. The raw materials are turned into finished or partly finished products. As they are sold the proceeds are deposited in the bank and when the note comes due it is paid in whole or in part according to the nature of the business and the extent to which the raw materials, to purchase which the loan was first made, have passed on and been paid for. The rate and time at which those ultimate payments are made have no discernible relation to the proximity of the maturity date of the manufacturer's note. In fact the underlying theory of the eligibility requirements of rediscountable paper in the Federal Reserve System is that sound commercial credit is extended only for transactions which are self-liquidating. Does Professor Phillips maintain that this automatic liquidation can be predicted, that the borrower adjusts the time of his loan accordingly and that it occurs at the end of this definite period? Yet that is precisely what his chart and account would lead one to suppose. This he has hardly proved and it would seem more in accord with the normally observable phenomena of business to believe that the substance of liquidation accumulates, on the whole, rather evenly throughout the period during which the bank credit has been extended. To the extent that this is true it further invalidates the distinction between primary and derivative deposits.

To sum up we may say that primary deposits are no more likely to be stable than derivative deposits, that accumulations and depletions of both kinds of accounts have much more in common than Phillips has allowed; and on the whole the distinction is untenable.

The second premise of Professor Phillips is that the ratio of derivative deposits to loans is 20 per cent. The

validity of this premise depends, in part at least, on the proportion between demand deposits and time deposits, and between commercial loans and capital loans.

Every bank which has both demand and time deposits plays a dual rôle in the expansion and distribution of credit. As a holder of demand deposits, it has sold its clients the right to demand immediate payment in return for the right to demand immediate payment from other banks, from itself or for cash. To a large extent the rights to demand immediate payment held by its clients and effective against itself have their origin in the acceptance by the bank of the right to claim payment from its depositors at some definite time in the future, in other words they are the proceeds of loans and discounts. To the extent that a bank provides credit to its clients realizable by the latter upon demand it is a fabricator of credit. It is bank credit in a very literal sense which the customer receives. The capacity of a bank to expand as the result of its own credit creating energy is another matter which will be examined later.

It remains to weigh the other rôle of the bank, the rôle in which it accepts deposits from its customers which they do not intend to withdraw on short notice, but on the contrary expect to leave there for a substantial period, an intention which is a part of the agreement made with the bank. Against such a deposit the latter is required to keep a reserve of only 3 per cent. In consideration of waiving the right to demand payment immediately upon notice the bank agrees to pay the depositor a rate of interest on his undisturbed balance. This is usually a little less than the market rate of interest on first class securities and varies from section to section. The bank takes these deposits and re-invests them for longer periods. The proceeds are very likely to be used for capital purposes and be converted into "brick and mortar." In this capacity the banker acts somewhat like an investment broker. He takes the funds of his clients and exercising his own skilled investment judgment places them at the disposal of the community. For this service the depositor pays him a fee which amounts to the

difference between the rate paid to the depositor and the amount received by the banker on the investments made with his clients' funds. A part of this difference must also be considered in the nature of insurance, for the banker in addition to being an agent, must guarantee the principal which his customer has entrusted to him.²⁵ We may refer to these two functions as the investment and commercial functions of a bank. On the asset side of the balance sheet these two functions are represented by loans for capital purposes and loans for commercial purposes. We have fairly definite figures for the liability side of the bank statement (in the figures for time and demand deposits respectively) but for the other side we must rely on estimates. As regards loans for capital purposes in comparison with those for commercial purposes, Moulton makes the following estimate which we may regard as a sufficient approximation.

"We may safely conclude that around 50 per cent of all loans of national and state banks and trust companies is devoted to investment uses, and that, including direct investments, in the neighborhood of two-thirds of all credit extended by commercial banks goes for fixed rather than for working capital."²⁶

The classification of deposits we may take from the reports of the Comptroller.

	<i>Time</i> <i>in thousands of dollars</i>	<i>Total</i>
1922	15,613,828	37,194,318
1923	18,018,276	40,034,195
1924	19,090,169	42,954,121
1925	20,833,394	46,765,942
1926	24,211,000	48,882,296

This yields a ratio of 45.3 per cent which is probably an understatement since a portion of the deposits reported to the Comptroller each year are unclassified and the difference between total deposits and time deposits does not consist entirely of demand deposits. It is fair to assume that approximately one half of all deposits in the United States are time and the other half demand. If this estimate is

²⁵ Laughlin, *Banking Progress*, p. 158, for a discussion of dual rôle.

²⁶ Moulton, H. G., *Journal of Political Economy*, Vol. XXVI, pp. 717-718.

correct then the investment item on the asset side of the bank statement is simply the accounting corollary of the time deposit item on the liability side.

At this point a question may be raised. Is the difference between the return paid on investments and the interest paid to the depositor the sum total of the profit which the banker derives from the exercise of his investment function? It is if the total invested is withdrawn from the bank and none of it re-deposited in the same bank. This is probably true in a great many cases but is not true in a sufficient number, to establish an important source of additional income to the banker. Where the banker purchases securities in another money center the chances are excellent that he will suffer a net clearing loss equal to the investment. But not all investments are of this character. John Smith comes in and borrows \$5000.00 on a first mortgage to enable him to build a home. Smith draws his checks to pay the various contractors some of whom in all likelihood have accounts with the bank, the funds seep through the community. To the extent that the materials are bought at points outside the checks offered in payment will find their way into other centers and will have to be cleared but some of the funds will remain in the community and will serve to swell the deposits of others to compensate in part for the depletion of Smith's account. Or the bank invests in a local shoe factory. It should be kept in mind that the bank is still using the funds deposited on time all of which, when invested, it is expected to lose. The factory uses the funds to build an addition to the plant, to have a new siding built, to install new machinery or for any one of a number of other purposes.

In some of these cases the new capital when spent will leave the community but in others a portion in the very process of being converted into brick and mortar will flow back into the bank. Furthermore such an investment would be made only if it could be justified by an increased productiveness of the plant in which it is sunk. Increasing the flow of goods from the community should result in an in-

creasing flow of funds from other centers in settlement of this favorable balance of trade. Eventually the capital consumed in the production of the shoes flowing out in a steady stream and incorporated in minute proportions in the product of the plant comes back to the point of origin and as it returns it swells the total of deposits. There is therefore some possibility of expansion even for time deposits. How great this is it is impossible at present to determine.

Professor Phillips has ignored the possible expansion of time deposits and the item on the asset side which is the accounting correlative of time deposits has led him into another error. In determining the amount of the loans of a given bank which is left on deposit a line should be drawn between those loans which represent the re-investment of time deposits and those which are the result of the commercial function of the bank. The first type of loans will be relatively non-liquid, for long periods of time and will be characterized by a partial withdrawal of the proceeds. The second type will be liquid, for shorter periods and will be characterized by a partial withdrawal of the proceeds. In determining the ability of the bank to expand its loans in the exercise of its commercial function the average amount of the proceeds left from the commercial type of loan should be considered rather than the amount left from the investment type which will very often be zero or from a combination of the two which will give an inaccurate picture. This distinction may be better visualized if we take two banks one of which is a savings bank and accepts no demand deposits and the other of which is a commercial bank which accepts no time deposits. The liabilities of the first bank permit it to use the funds entrusted to it in the purchase of bonds, real estate mortgages, etc. Those who sell the bonds and mortgages are not expected to maintain a portion of the proceeds on deposit and certainly do not do so. Our derivative deposit ratio for such an institution would be zero.

The demand liabilities of the commercial bank compel it

to maintain assets of a highly liquid character to conform to its liabilities. It invests therefore to as large an extent as possible in short time, self-liquidating paper. It provides the community with working capital which is constantly flowing in and out as contrasted to the more or less permanent capital which the savings institution provided. The derivative deposit ratio of the commercial bank will be very substantial as compared to that of the savings bank. Now the great majority of the banks in the country are a combination of these two institutions. They are dual-rôled and are savings banks while at the same time they discharge the functions of the commercial bank. We are interested here in the ability of the commercial bank to expand and since the amount of deposits left in a loan account is an important factor in the ability of the bank to multiply its loans it follows that an average computed on the basis of investment loan proceeds left on deposit and of commercial loan proceeds left on deposit seriously understates our derivative deposit ratio factor.

While Professor Phillips made inquiry in a number of widely scattered centres in order to determine the ratio of derivative deposits to loans he made no distinction between the two types.

When a large proportion of a bank's advances take the form of paper bought from paper dealers—notes of distant borrowers—the ratio of derivative deposits to combined advances made to depositors and non-depositors may be decidedly low. Essentially the same result is obtained when advances are made on mortgage security. The Indiana bank included in the table above reports that about 65 per cent of its loans are made on commercial paper and mortgages; and that on such loans, practically no deposits are left with the bank. The remaining 35 per cent of loans are made to local commercial borrowers, who are also depositors, and about 25 per cent of the amount loaned to these depositors remains, on an average, with the bank for the duration of the loans.”²⁸

It is with the latter derivative deposits that Professor Phillips should have been concerned since they are the

²⁸ Phillips, *Bank Credit*, op. cit., p. 48.

proper reflection of the commercial function of the bank. Instead of doing that he lumped the two together and his table shows for this particular Indiana bank a derivative deposit ratio of 8.75%.²⁹

As a result of this he secures an average, unweighted, for the entire country, of derivative deposits of 11.3 per cent. The lack of weighting is important since on his own estimates New York shows a derivative deposit ratio of 20 per cent which is practically offset by the derivative deposit ratio of Oskaloosa, Iowa, with a ratio of only 2 per cent.³⁰ However, in the absence of definite statistical material on this subject and in order to be conservative let us accept the estimate of Professor Phillips and consider our average derivative deposit as 20 per cent of the original loan. In other words we will accept the second premise of the proposition which we are questioning, and use it as the best available hypothesis for a theory of credit expansion.

Turn now to the third premise which is that of all the checks drawn on a bank so large a portion passes through a clearing operation that the part which is passed over the counters of the same bank by other depositors of that bank is negligible. Here we take sharp issue. Professor Phillips has taken the case of a large bank in a great city and stated that of \$10,000,000 of checks drawn on that bank only \$100,000 come back to the same bank via other depositors while 99 per cent come back only after they have been through some clearing operation. There is great danger in deriving a general rule covering 30,000 institutions from the experience of a single institution unless the experience of that institution is shown to be typical. Not to develop a counter generalization but simply to illustrate the error in the above logic the writer made inquiry at a bank which was one of two banks in a college town of 10,000 inhabitants and at another bank which was located in the suburb of a large eastern city. The cashier of the first institution estimated that from 60 to 80 per cent of

²⁹ *Ibid.*, p. 45.

³⁰ *Ibid.*, pp. 45-46.

all the checks drawn on the bank came back without passing through a clearing operation. The cashier of the second bank estimated that from 20 to 30 per cent of the checks drawn on the bank were re-deposited by other clients of the bank. If we deduce from these two observations that on an average, in all the 30,000 banks in the country, $52\frac{1}{4}$ per cent of checks drawn are cleared and the other $47\frac{1}{4}$ per cent pass back to the banks without clearing the integrity of our logic might properly be indicted.

The ability of a bank to multiply its loans, or to allow a number of depositors to check against the same funds depends upon three factors. The first of these is the knowledge based upon the law of averages that not all the depositors come in at the same time to demand payment. The second is that when they do demand payment the evidence of the right in the form of a check is often transmitted to another depositor of the same bank. Finally and the least important of the three is the fact that few depositors ever completely exhaust their accounts and usually have a balance more or less substantial.

It is with the second of these pillars of bank credit that we are here concerned. Obviously if a community is entirely self-sufficient and if but one bank or a bank with branches supplies all the banking facilities every check drawn against such a bank will come back to it without involving any loss of cash or reserves. The only reserve such a bank needs is that required by law. While no community is so completely self-sufficient, nevertheless every bank has its origin in local requirements and its existence is justified by its ability to supply banking facilities for local needs. This is the justification for branch banking in a big city no less than for independent banking in a small country town. To a certain extent, therefore, checks drawn are paid locally and are deposited in the bank on which they are drawn without sustaining a clearing operation. As we have indicated above the ability of a bank to expand is essentially dependent upon the extent to which this takes place.

To appraise this factor is our task at this point. If we can

determine the total debits to individual accounts in all banks in the United States and can discover the total amount of checks drawn on individual accounts which pass through some clearing transaction we have the elements necessary to our solution.

Since 1919 the Federal Reserve Board has been receiving detailed reports of debits to individual accounts from banks in 141 clearing centres. It has also been receiving reports including among other things net demand deposits from about 650 banks in 100 cities. Unfortunately the debits reports and the deposits reports do not come from the same banks. Carl Snyder in determining the possibility of comparing the debits from 141 centres with the demand deposits of 650 banks has this to say, "A careful comparison of the totals of the debits of the 100 cities with the 141 centres showed, however, that there was little difference even in the crude totals, and that the fluctuations in the two series were exactly comparable."³¹

Respected opinion, therefore, sanctions a procedure which otherwise might be characterized as loose statistical discernment. The debits as reported for the 141 centres are those on the books of reporting banks to accounts of individuals, firms, and corporations, and of the United States Government including war loan deposit accounts, also debits to savings accounts, and certificates of deposits paid. Figures do not include debits to the accounts of other banks or in settlement of clearing house balances, payment of cashier's checks, charges to expenses and miscellaneous accounts, corrections and similar charges.³² Of the excluded debits a large part of those to the accounts of other banks, in settlement of clearing house balances and in payment of cashiers' checks appear in the figures for clearing house transactions. In other words, the latter have not been corrected in the same fashion as the debits so that in comparing the two it will be necessary to modify

³¹ Carl Snyder, *Business Cycles and Business Measurements*, The Macmillan Company, New York, 1927, p. 150.

³² *Annual Report of the Federal Reserve Board*, 1926, p. 181.

the debits to allow for the inclusion of other items in the clearing house totals. In order to illustrate our method, let us take the pertinent statistics for the year 1922.

1922

Deposits in all reporting banks of U. S., Alaska & Insular Possessions.
000 omitted ²²

Total individual deposits	\$37,194,318
Time deposits	13,237,407
Time certificates of deposit	2,332,753
Postal savings deposits	43,668
U. S. deposits	128,887

Deposits in 700 reporting member banks in leading cities.²⁴

Total individual deposits	14,442,000
Time deposits	3,372,000
U. S. deposits	211,000

Bank debits to individual accounts in 141 principal cities.²⁵

1922	\$439,363,906,000
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Clearings for 209 Clearing Houses, year ending Sept. 30, 1922.²⁶

\$381,620,624,000

Clearing Operations of Federal Reserve System, exclusive of duplication.²⁷

\$150,506,500,000

In comparing the deposits of 650 reporting member banks with those of all reporting banks we cannot make a flat comparison of the total deposits since demand deposits and time deposits are not equal dollar for dollar in their power to create debits. An investigation in New York City showed that time deposits turned over, in New York City about twice a year.²⁸ Since the rate of demand deposit turn-over in the same city over a period of six years averaged 77.1 ²⁹ we may assume that throughout the country the velocity of time deposits is $2/77.1$ or .0259 times as great as that of demand deposits. If we multiply our time deposits

²² *Annual Report of the Comptroller, 1922*, p. 145.

²⁴ *Annual Report of the Federal Reserve Board, 1926*, p. 160.

²⁵ *Ibid.*, p. 181.

²⁶ *Annual Report of the Comptroller, 1923*, p. 508.

²⁷ *Annual Report of the Federal Reserve Board, 1923*, p. 161.

²⁸ Carl Snyder, *Business Cycles*, op cit., p. 148.

²⁹ *Ibid.*, p. 295.

by this fraction and add the result to our demand deposits we should obtain deposit figures for the two groups of banks, i.e., the 650 reporting member banks and all the banks in the U. S. which are comparable. These modified deposit figures which permit us to consider the new totals as demand deposits we shall call equivalent demand deposits.

The use of this fraction assumes that time deposits and demand deposits vary in the same ratio to each other throughout the United States, i.e., if in a given year the rate of demand deposit turnover in New York is 80 and that of time deposits is 2, then in a community where the rate of demand deposit turnover is 40 the turnover of time deposits will be one. There is no reason for supposing that time deposits have a constant turnover throughout the country any more than there is for supposing that demand deposits have a constant turnover and the only knowledge to guide us in an estimate of the velocity of time deposits is the variability in the turnover of demand deposits.

Using this fraction to reduce the deposits of the two groups of banks to a common denominator we have an amount of demand deposits equivalent in debit creating power to the total deposits of all reporting banks in the United States of \$22,114,405,000 and for the 650 reporting member banks of \$11,368,000,000. We are now in a position to make an equation with the total debits in the United States as our unknown quantity.

$$\begin{aligned} 22,114,405 : X \text{ equals } 11,368,000 : 439,363,906 \\ X \text{ equals } 834,536,000 \end{aligned}$$

This requires certain corrections. In the first place the equation above assumes that the deposits in banks throughout the U. S. have the same rate of turnover as those in the 650 banks in 100 principal cities whose debits we have used as a calculating base. This is not true since the velocity of bank deposits in small places is much less than in large centers such as New York.⁴⁰ Snyder estimates the rate for 141 cities at 41.4⁴¹ while Burgess estimates the rate

⁴⁰ *Ibid.*, p. 294.

⁴¹ *Idem.*

for the whole country at somewhere between 23.6 and 36.⁴² By using the known correlation between the amount of deposits in a community and the rate of turnover Burgess computed the maximum as 36 for the 282 clearing house centers reported in the Bankers' Encyclopedia for 1921. The deposits in these 282 centers amounted to 26 billions on Dec. 31, 1921, while the deposits for the whole country were 40.6 billions. He arrives at his lower limit, i.e., 23.6 on the assumption that the 14.6 billions of deposits outside of the 282 centers have a zero rate of turnover and at his upper limit, i.e., 36 on the assumption that these outside deposits have the same rate of turnover as those within the 282 reported centres. In Snyder's estimate of 41.4 for 141 cities and Burgess' estimate of 36 for 282 centres the eclipsing importance of New York City gives an average for the country which is far above that which would hold true for the vast majority of banks. If we take the cities outside of New York for which the rate of turnover was calculated directly from deposits and debits we find Chicago with 45, Boston 34.9, San Francisco 39.6, Rochester 22.4, Albany 28.8, Syracuse 9.5, Binghamton, N. Y. 22.2 and Buffalo 22.2. The only two cities to exceed Snyder's average are New York and Chicago and in addition to these two, San Francisco is the only other directly calculated centre to exceed the average computed by Burgess. For the thousands of banks outside of the 282 centres considered by Burgess the average rate of turnover is bound to be much less than 36. If we take a point approximately half way between the two estimates of Burgess and place the average of the country at 30 we secure a rate of turnover for deposits outside of the 141 centres of approximately 18. Therefore if we take the difference between the demand deposit equivalent of all the banks in the United States, \$22,114,405,000, and the demand deposit equivalent of the 650 reporting member banks, \$11,368,000,000, and multiply it by 18 and then add the product to the established debits for the 141 centres we shall be one step nearer our goal.

⁴² Federal Reserve Bulletin, May, 1923, p. 566.

Carrying this calculation out we have a new debit total for all the banks in the country of \$630,991,000,000.

This unfortunately is not yet our final total. We have taken the total deposits in all reporting banks in the United States and subtracted the known total of time deposits. On June 30, 1926, there were \$5,742,767,000 of deposits in all reporting banks which were not classified. It is impossible to tell whether these should be treated as demand deposits or time deposits in determining the effect upon bank debits. Including them in demand deposits as we have done undoubtedly overstates our total. This exaggeration can be offset by another factor tending to increase our calculation for total debits. The report of the Comptroller for 1926 showed 28,146 banks with total deposits of \$49,070,123,000,⁴³ whereas Rand McNally Bankers' Directory reports for Jan. 1, 1926 \$54,708,259,341 deposits for 29,745 banks.⁴⁴ Here are five and a half billion dollars of deposits which have some rate of turnover greater than zero and create some debits. If we include unclassified deposits with our demand deposits we overstate the total of debits. If we ignore the unreported deposits we understate our total. Since the precise resolution of these two factors is impossible, we must hope that they will offset each other.

Having reduced our total debits to a little more than 630 billions, it is now necessary to correct this total upward to account for factors which influence our clearing house totals. The debits reported for the 650 banks do not include debits to the accounts of other banks, in settlement of clearing house balances or debits to the bank's own account as the result of the deposit of cashiers' checks. Yet items on all three scores pass through the clearing houses and the Federal Reserve Banks and are included in the total of exchanges. Perhaps we will do better by modifying our total for clearings in the same manner as the total of debits and approach a comparable minimum rather than a comparable maximum or some intermediate state.

⁴³ *Report of the Comptroller, 1926*, p. 93.

⁴⁴ *Rand McNally Bankers' Directory, 1926*, p. 32D.

Total exchanges for 209 clearing houses for year ended Sept. 30, 1922 amounted to \$381,620,624,000. The net clearing operations of the Federal Reserve system for 1922 were \$150,506,500,000. These clearing operations include checks drawn by bankers on bankers as well as cashiers' checks. The statements of National Banks, State Banks, Loan and Trust Companies given in the annual reports of the Comptroller contain items marked "Due to other banks." These items include cashiers' checks and certified checks outstanding as well as deposits due to other banks. Since a certified check is charged to an account as soon as certified and the account reduced although the check has not actually been presented for payment we are justified in including that item. If we add to the sum of these items the net deposits of bankers in the Federal Reserve Banks, we shall have the approximate deposits against which bankers draw checks which pass through clearing houses and affect the totals. For the year 1922 these deposits amount to \$5,753,000,000. If they have the same proportionate effect on clearings as individual deposits and there appears to be no reason for assuming the contrary we must correct our total of bank clearings for 1922 (\$532,127,124,000) accordingly. The addition of the bankers' deposits gives us a new total of equivalent demand deposits of \$27,867,405,000 whose ebb and flow bring about our total of clearings. This indicates that for the year 1922 approximately 20.7 per cent of our total clearings were attributable to bankers' credit instruments and gives us a new total for checks drawn on individual accounts which pass through the clearing houses of \$421,976,000,000.

A further reduction is made necessary by the fact that most of the clearing houses of the country settle their balances through Federal Reserve Banks which amounts to a duplication since the balance of \$100,000 which is cleared through the Federal Reserve Bank is counted by the latter as part of its clearings and also by the clearing house.

What is the size of the balance cleared through the Federal Reserve Banks? The most important single balance

clearing is obviously that of New York. From 1922 to 1926 the average clearings of the New York Clearing House amounted to \$246,754,000,000 per year. The balances for the same period averaged 10.72 per cent all of which were cleared through the Federal Reserve Bank of New York.⁴⁵ The ratio of balances to total clearings is probably less in New York than the average throughout the country. In 1908 the percentages of balances to total clearings in other cities was as follows:

Buffalo.....	12.0 per cent
Pittsburgh	16.5
Chicago	7.5
Philadelphia	11.5
St. Louis	9.3 "

The percentage in New York the same year was 4.63.⁴⁷

If, therefore, we take the total of all the clearing house associations in the United States for which we have data and reduce that total by 10 per cent we shall be erring on the side of conservatism, purposely, in order to compensate for another unmeasurable item.

All clearing house associations do not clear through the Federal Reserve System. If we take ten per cent of the clearings of all the associations and assume that they are balances cleared through Federal Reserve Banks we shall be overreaching ourselves for a small portion of the total clearings. Therefore if we take a percentage which is a little less than the actual ratio of balances cleared for clearing houses that we know do settle balances through Federal Reserve Banks we shall be compensating for those balances which are not so cleared and for which there is no duplication of clearings in the same sense that there is for the New York Clearing House whose balances for the past nine years have been cleared through the Federal Reserve Bank of New York. Ten per cent of the total clearings of 209 reporting clearing houses for 1922 amounts to \$38,162,062,400. In that year New York alone cleared balances

⁴⁵ *Report of the Comptroller, 1926, p. 607.*

⁴⁶ *Westerfield, Banking Principles and Practice, op. cit., Vol. III, p. 635.*

⁴⁷ *Statistical Abstract, 1925, p. 275.*

through the Federal Reserve Bank in excess of 21 billion dollars. Subtracting this correction from the last net total for clearances, we have a final total of \$383,814,000,000 of checks drawn against individual accounts which are cleared and can be compared with our previously established total for debits to individual accounts.

Before we proceed to this comparison, there are two other factors for which we should account. The Comptroller's Report for 1925 gives us the total clearings for 236 clearing houses. This, of course, includes New York and practically every important centre in the country. There are, however, a substantial number of clearing houses which do not report. Professor Spahr in his excellent work on the clearing and collection of checks mentions 362 clearing houses at the beginning of 1925.⁴⁸ While this may seem like a serious gap in the evidence it is altogether probable that the non-reporting houses are small and unimportant. In addition to these clearing houses for which we have no figures there is a certain amount of clearing in small towns without an organized clearing house and there is also some direct collection of checks which do not appear in the total clearings. The seriousness of this omission in the evidence is mitigated by the fact that there are hundreds of large mercantile houses, mail order and department stores, insurance and shipping organizations whose checks on themselves pass through the clearing houses and swell the total of clearings. In addition we have the drafts payable by Federal Farm Loan Banks and Federal Intermediate Credit Banks which pass through clearing houses and swell the total of clearings although none of these add any compensating weight to our total of debits. We shall, therefore, hope rather than insist that the contributions of these institutions to the total of clearings and for whom no compensating debits appear will balance the absence of clearings from those centres whose deposits have been used in calculating the total of debits. The amount on either side relative to the

⁴⁸ Walter E. Spahr, *The Clearing and Collection of Checks*, Bankers Publishing Company, New York, 1926, p. 531.

totals involved is not likely to be very important and as has been pointed out their importance diminishes still further to the extent that they cancel each other.

For the year 1922, therefore, our total clearances for this particular purpose is \$383,814,000,000 as compared to total debits for the same purpose of \$632,692,000,000. This yields the conclusion that of every \$100.00 drawn on a bank about \$62.00 passes through a clearing house or a clearing operation and \$38.00 is deposited by some other depositor of the same bank.

To summarize the procedure in calculation:

1. Reduce all deposits to the equivalent of demand deposits by multiplying time deposits by $2/77.1$, or $.0259$, and add the result to net demand deposits.
2. Let X equal total debits to individual accounts for all banks in the country.
3. Total equivalent demand deposits of all banks is to X as equivalent demand deposits of 650 reporting member banks is to debits to individual accounts as reported from 141 centers.
4. Solve for X to get crude debit total.
5. Total equivalent demand deposits of all banks minus total equivalent demand deposits of 650 reporting member banks multiplied by 18 (corrected for yearly fluctuations in velocity of demand deposits) plus individual debits in 141 reporting centers equals total net debits to individual accounts.
6. Total exchanges for all reporting clearing houses plus clearings of 12 Federal Reserve Banks equal crude total of clearings. This crude total is the result of drafts on individual deposits plus drafts on bankers' balances in Federal Reserve Banks, National banks, State banks and Loan and Trust Companies.
7. Multiply total clearings by

Total equivalent individual demand deposits

Total equivalent individual demand deposits plus bankers' deposits

8. From the result of the previous operation subtract one tenth of all clearing house exchanges exclusive of Federal Reserve Banks. This will give net clearings exclusive of those attributable to the activity of bankers' balances and exclusive of duplications.

9. Divide net exchanges obtained as a result of operations under (8) by the net debits to individual accounts obtained under (5). This will give percentage of checks, by amount, drawn against individual accounts which pass through a clearing operation.

Carrying these operations out for a five year period we have the following results:

In 1922—62.0%	of all checks drawn passed through a clearing operation.
In 1923—64.7%	" " " " " " " "
In 1924—65.0%	" " " " " " " "
In 1925—65.1%	" " " " " " " "
In 1926—66.7%	" " " " " " " "

The average for the five year period is 64.7%. It is interesting to compare this with Professor Kemmerer's estimate of 35.0% for the period 1879 to 1908.⁴⁹ He expresses the opinion that the proportion during the latter part of the period has probably been increasing.⁵⁰

The work of Professor Fisher makes possible another comparison and a probable check on the above figures. Fisher discovered that during 1909 the ratio of check transactions to clearings outside of New York City was 4.4 to 1, while for New York itself the ratio was .9 to 1.0.⁵¹ He decided that outside clearings multiplied by five, plus New York clearings, would give a total of check transactions for the country. Actual check transactions for 1896 and 1909 were known by virtue of special reports to the Comptroller and it was possible to determine the ratio of actual check transactions to computed check transactions. For 1896 this ratio was .69 while for 1909 it was .88. For the intervening years totals were determined by interpolation. Knowing the total of checks cleared and the estimated total of checks deposited we may calculate the percentage which passed through the clearing houses.

* Edwin Walter Kemmerer, *Money and Credit Instruments in their Relation to General Prices*, 2nd ed., Henry Holt & Co., New York, 1909, p. 118.

⁵⁰ *Ibid.*, p. 117.

⁵¹ Irving Fisher, *The Purchasing Power of Money*, The Macmillan Company, New York, 1925, p. 447.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	New York Clearings	Outside Clearings	Barom- eter (2) + 5 × (3)	Ratio of Check Trans- actions to Barometer	Check Trans- actions (4) × (5)	Per Cent of Checks Passing Through Clearing Houses
1896	28.9	22.4	140.9	.69	97	52.8
1897	33.4	23.8	152.4	.70	106	54.0
1898	42.0	26.9	176.5	.72	127	54.2
1899	60.8	33.3	227.3	.73	166	56.7
1900	52.6	33.4	219.6	.75	165	52.1
1901	79.4	39.0	274.4	.76	208	56.9
1902	76.3	41.7	284.8	.78	222	53.2
1903	66.0	43.2	282.0	.79	223	49.0
1904	68.6	43.9	288.1	.81	233	48.2
1905	193.8	50.0	343.8	.82	282	51.0
1906	104.7	55.2	380.7	.84	320	50.0
1907	87.2	57.8	376.2	.85	320	45.3
1908	79.3	53.1	344.8	.87	300	44.1
1909	103.6	62.0	413.6	.88	364	45.5

The first six columns are the figures of Professor Fisher.⁵² The last column is the result of the division of (2), New York Clearings, plus (3), Outside Clearings, by (6) Total Check Transactions. It gives us an average for 14 years of 50.9%. This, of course, represents only the proportion of the total checks which passed through established clearing houses. Many checks were cleared informally for which no reports were available and while this is to some extent still true to-day our clearing system has developed so rapidly with the establishment of the Federal Reserve Banks and our statistical facilities are so much better that the relative number of checks cleared for which we have no definite evidence must be much smaller. The above figures based upon Fisher's data would have to be revised upward.

The inadequacy of the clearing figures with which Fisher had to work is very clearly demonstrated by the application of his method to the determination of the amount of checks which passed through clearing operations during the period of 1922-1926 as compared to the total of checks deposited. We shall multiply clearings outside of New York for both private clearing house associations and the Federal Reserve

⁵² *Ibid.*, p. 448.

Banks by five and add that sum to the total of clearings for New York City for both the Federal Reserve Bank of New York and the clearing house association of that city. This estimated total of check transactions we can correct by multiplying it by a coefficient based upon Fisher's ratio of actual check transactions to the computed total of check transactions. Since this actual ratio was .69 for 1896 and .88 for 1909, we will take the average of the two, .785.⁵³

	(1)* Total Clear- ings	(2) Clearings Outside New York	(3) Estimated Debits [(1) - (2)] + 5 (2)]	(4) (3) × .785	(5) (1) ÷ (4)	(6) Percentage Passing Through Clearing Houses
1926						
243 clearing houses	525.5	232	2398.9	1884.1	<u>786.9</u>	41.8%
12 Fed. Res. Banks	261.4	171			<u>1884.1</u>	
1925						
236 clearing houses	496.2	219.4	2265.4	1678.3	<u>743.4</u>	44.3%
12 Fed. Res. Banks	247.2	161.1			<u>1678.3</u>	
1924						
217 clearing houses	435.0	199.5	2013.3	1580.4	<u>644.1</u>	40.7%
12 Fed. Res. Banks	209.1	142.8			<u>1580.4</u>	
1923						
218 clearing houses	408.8	194.2	1915.4	1503.5	<u>605.4</u>	40.3%
12 Fed. Res. Banks	196.6	133.3			<u>1503.5</u>	
1922						
209 clearing houses	379.6	166.3	1615.3	1268.0	<u>530.1</u>	41.8%
12 Fed. Res. Banks	150.5	105.0			<u>1268.0</u>	
Average for 5 year period						

* (1) through (5) are in billions of dollars.

This is much lower than the figure developed by us. The difference is due chiefly to the relative inadequacy of the clearing figures available to Fisher. Whereas only 137 clearing houses reported to the Comptroller during the year following Fisher's period⁵⁴ 243 reported during 1926.⁵⁵ There is no reason to suppose that the velocity of bank deposits has increased since 1910, an increase which

⁵³ *Idem.*

⁵⁴ *Report of the Comptroller, 1910, p. 807.*

⁵⁵ *Ibid.*, 1926, p. 611.

might account for the relative increase in clearing house totals. Carl Snyder has prepared an index for variations in the rate of deposit turnover extending back to 1875 and there is no evidence of a cyclic trend.⁵⁶ Fisher's average velocity for a 14-year period from 1896 to 1909 is 42.1.⁵⁷ While this is remarkably close to the estimate by Snyder for 141 centres, it is considerably above that which Burgess has estimated for the entire country and furthermore shows a much greater range and instability. For 1909 Fisher has a velocity for circulation of bank deposits of 53.9⁵⁸ which is probably considerably larger than the actual rate. This is no reflection on Professor Fisher, but rather an indication of the imperfection of his material. It is very probable, therefore, that no increase in the velocity of bank deposits, or very little, has taken place during the last twenty years which might account for the relative increase of clearings. To-day we have a much more complete system of reporting and with our Federal Reserve Banks to take care of inter-district clearing our reports for clearings are probably more than 95 per cent complete. By comparing total clearings with total deposits, reduced to a comparable basis by transforming time deposits to equivalent demand deposits, for the five year period 1910-1914, and again for the five year period 1922-1926, we discover the relative increase in clearings. Taking the five years following Fisher's period the total clearings reported are 834.6 billions and the sum of total individual deposits for all reporting banks for the same five years is 84.18 billions. This yields a ratio of clearings to deposits of 9.91 to 1.00. Using the same method for 1922-1926 we have clearings of 3,309.9 billions to deposits of 215.81 billions which is a ratio of 15.3 to 1.0 In other words the statistics for clearings available for the period actually covered by Fisher, very seriously understated the total. To-day the ratio of reported clearings to deposits is 50 per cent greater than

⁵⁶ Carl Snyder, *Business Cycles*, op cit., p. 299.

⁵⁷ Irving Fisher, *The Purchasing Power of Money*, op. cit., p. 448.

⁵⁸ *Idem*.

the same ratio for the earlier period. If, then, we may conclude that clearings during the earlier period were under reported by $33\frac{1}{2}$ per cent then the percentage of drafts passing through clearing houses at the present calculated by this second method should be raised 50 per cent.⁵⁹ This correction yields the following results for the five year period 1922-1926.

1926—62.7	per cent	pass	through	clearing	houses.
1925—66.5	"	"	"	"	"
1924—61.1	"	"	"	"	"
1923—60.5	"	"	"	"	"
1922—62.7	"	"	"	"	"

This gives us an average for the five year period of 63.5 per cent which may be compared with the average obtained by an entirely independent method of 64.7 per cent.

Another method by which we may check our results is suggested by the calculations of velocity of deposits for the whole country made by Burgess.⁶⁰ His minimum is 23.6 and his maximum is 36. Taking a point midway we may decide that 30 is the average rate of demand deposit turnover in the United States. We have also seen that Snyder has calculated the average rate for 141 centres 41.4. We know the demand deposits in all reporting banks in the United States and if we make allowances for time deposits as we have in our own previous calculations we can secure a figure for this country which will represent equivalent demand deposits of the entire country up to a very small margin of the actual total. If we multiply this figure by the average rate of turnover we will get a computed total of individual accounts debits. If we divide this total into the corrected total for clearings we will get the percentage of checks which are cleared. However in determining the percentage for each year allowance must be made for the deviation of velocity for that year from the average. This

⁵⁹ These calculations are all based on statistics furnished by the annual reports of the comptroller.

⁶⁰ W. R. Burgess, *Velocity of Bank Deposits*, Journal of the American Statistical Association, June, 1923, pp. 727-740.

can be accomplished by multiplying our normal estimated average for the whole country, i. e. 30, by the following fraction

$$\frac{\text{Deposit velocity for 141 cities for the year}}{\text{Average deposit velocity for 141 cities for seven years}}$$

The following is a sample computation.

Equivalent demand deposits for 1925 were 26,621 millions.

Rate of deposit turnover for 141 cities for 1925 was 44.2.

Estimated velocity of equivalent demand deposits of 1925 equals

$$30 \times \frac{44.2}{41.4} = 32$$

Multiplying above equivalent demand deposits by 32 we get estimated total debits for country for 1925 of \$853,872 millions.

The total clearings for 1925 corrected for bankers' checks and duplications is \$540,270 millions.

Dividing the latter figure by the total for debits for the year we get 63.2 per cent as the proportion of checks which pass through a clearing operation.

Using this method for the five year period, 1922-1926, we get the following results:

1922—59.5 per cent
1923—64.5 per cent
1924—63.5 per cent
1925—62.5 per cent
1926—66.7 per cent

Average for 5 year period—63.5 per cent.

We may now summarize by comparing the results of our three methods:

	I	II	III
1922	62.0	62.7	59.5
1923	64.7	60.5	64.5
1924	65.0	61.1	63.5
1925	65.1	66.5	62.5
1926	66.7	62.7	66.7

They are in such close agreement that conclusions based upon them should be reasonably accurate. Taking the average of the three methods for the five year period we get 63.6 per cent as the proportion of checks drawn by in-

dividuals on individual accounts which pass through some clearing operation.

It must not be assumed that any given bank would be justified in depending upon such a ratio of cleared checks. This is simply an average of thousands of banks and the ratio for any given bank must necessarily yield to the influence of many peculiar conditions which will modify the average. In a metropolitan community served by many banks the ratio will be high. In a self-sufficing community the ratio will be low. As our market areas widen and individuals reach farther and farther beyond the confines of their own communities in order to satisfy their needs the area of dispersion of checks will increase and a smaller portion of the total will be returned by other depositors of the banks on which they are drawn.

On the other hand as the movement of bank consolidations proceeds we may look for an increasing economy in the use of reserves for clearing purposes.

It follows that the third premise of Professor Phillips, that 99 per cent of all checks drawn pass through a clearing operation, is invalid. It appears from the preceding analysis,

1. That the distinction between primary and derivative deposits based upon the stability of the former and the instability of the latter is not well founded;
2. That 20 per cent as the ratio of derivative deposits to commercial loans is probably more nearly the average of the minimum of such deposits than the average of the actual ratio of derivative deposits to loans;
3. That 63.6 per cent of all checks drawn pass through a clearing operation, not 99 per cent.

How do these modifications of the premises bear on the ability of a bank to expand? The importance which this subject merits is dependent largely upon the light which it casts on the ability of a central bank to control credit by regulation of the discount rate. If a bank can extend

multiple loans ⁶¹ on the basis of a given advance from the central bank then the rate that the latter charges within ordinary limits is a man of straw so far as the attempt to control credit is concerned. If, under the conditions which we have developed, a bank lends an applicant \$100.00, \$20.00 are kept in the account and \$80.00 are withdrawn. Of this \$80.00, \$29.12 finds its way back to the bank via other depositors while \$50.88 must be met at the clearing house. As a result of this operation the bank has increased its own deposits by \$20.00 plus \$29.12, a total of \$49.12. If it is a member bank in a reserve city it must keep a reserve of \$4.912 against these deposits. Furthermore (in the absence of compensating expansion by other banks) it must take care of an adverse clearing balance of \$50.88. Therefore if this bank borrows \$55.792 from its Federal Reserve Bank it can extend accommodation of \$100.00 to one of its customers. On this basis our coefficient of expansion is 1.79219. In tracing this brief and superficial circuit of credit it must be kept in mind that this is an average bank, of which we probably have no exact examples, and that we are dealing with statistical averages. In other words it must not be assumed that most banks have the ideal experience which we have here offered.

But there is more to be said. The above example is based upon two assumptions. The first is that this is the only bank which is expanding its credit and the second is that the expenditure of the credit does not stimulate a counterflow of checks drawn on outside banks which will tend to cancel the adverse clearing balance. While this is a possible hypothesis we believe that it is an improbable one.

In examining the first of these conditions let us take a self-sufficient community whose banking facilities are provided by three banks of equal and similarly constituted resources and liabilities. Let us take 1000 as the index of loans and deposits in each institution with loans equaling

⁶¹ Since writing this chapter two other treatments of this subject have appeared, one by Dr. Benjamin Anderson in the Chase Economic Bulletin, June 25, 1928, and the other by Professor Ray B. Westerfield, *Banking Principles and Practice*, 1928, The Ronald Press, pp. 66-71.

deposits. We start then with the following abbreviated statements of the three banks:

Bank	Loans	Deposits
A	\$1000.00	\$1000.00
B	1000.00	1000.00
C	1000.00	1000.00

Applications for additional loans amounting to \$100.00 are made at C and granted. The statement of this institution then reads as follows:

Loans	Deposits
\$1,100.00	\$1,100.00

The successful applicants draw on the bank in accordance with the rules developed above and the accounts are reduced within a short space of time to 20 per cent of the amount of the loans. The other 80 per cent on being drawn flows to the three banks in the following proportions: 50.88 units to A and B together, or 25.44 to each and 29.12 to C. Deposits in A and B are now \$1025.44 and loans are \$1000.00. C has been compelled to increase its reserves through rediscount at the Federal Reserve Bank by \$55.792 while the expansion of C has increased the reserves of A and B by \$25.44. Multiplying this by our coefficient of initial expansion, 1.79219, A and B can each expand its loans by \$45.593 without borrowing from the central bank. Of the loans granted by A 20 per cent or \$9.1186 remain on deposit. Of the amount spent \$13.28 is re-deposited by other depositors of the same bank and \$23.198 passes through the clearing house. Of the part which passes through the clearing house one half gets there through Bank C and the other half through Bank B. In other words as a first result of the expansion of \$100.00 by C the checks on other banks which its own clients have presented have increased by \$11.599. This has been due to the expansion stimulated in A as the result of the antecedent expansion of C. The same process takes place with B and as the result of the expansion induced in B by the previous increase of credit in C there flows back to C another \$11.599

of checks on B. Thus the extension of \$100.00 of credit by C to its own clients has stimulated a counterflow of checks on other banks amounting to \$23.198 with which C can meet its own clearing deficit.⁹² Or looking at it in another light C has experienced an increase in its reserves of \$23.198, which increase has been the result of its own previous advances to its own customers. Again applying our coefficient of initial expansion C can extend loans amounting to $\$23.198 \times 1.79219$ or \$41.595. It must be understood that this secondary expansion has not been effected by an additional recourse to the central bank but is purely the result of the initial accommodation secured. The amount so far extended by C as the result of this \$55.792 loan from the central bank is \$100.00 plus \$41.595 or \$141.595. Dividing \$55.792 into \$41.595 we get a coefficient of secondary expansion of .74554. The proceeds of this secondary expansion will flow out into the credit mart of the community in the same manner as the first and 23.198 per cent of this secondary credit growth will eventually return to the bank of origin to be used for a tertiary expansion which would amount to $\$41.595 \times .23198 \times 1.79219$ or \$17.29. This would again induce a counterflow on the basis of which a fourth expansion would take place amounting to $\$17.29 \times .23198 \times 1.79219$ or 7.188. A fifth expansion would be $7.188 \times .23198 \times 1.79219$ or \$2.99. Successive expansion during the sixth and seventh cycles will amount to respectively \$1.24 and \$.51.

Mathematically we are dealing with an infinite series in a geometric progression with a ratio less than unity. The formula for this is

$$s = \frac{rl - a}{r - l} \text{ and } l = ar^{n-1}$$

$$a = 1.79219$$

$$r = .41595$$

⁹² If it uses this to reduce its loan from the central bank, its debt will be \$32.594, and if we can consider that this has made possible the loan of \$100.00 to its clients, the coefficient of expansion is 100 divided by 32.594 or 3.068. This is the same as the coefficient of mediate compound expansion developed on next page.

If we raise r to an infinite power the last term of our series will be infinitely small and the first term in the numerator of our formula for the sum of an infinite series will approach zero as a limit. Solving for s we get 3.068 as the coefficient of compound expansion.

These calculations give us an approximate total expansion for bank C on the basis of the original loan from the central bank of \$55.792 amounting to \$171.17. The successive expansions are suggestive of the series of concentric circles caused on the surface of a quiet pool by dropping a stone in the centre. This, however, does not exhaust the possibilities of expansion since we have traced only those expansions in direct line of descent from an increase in the reserves of C of \$55.792 and an increase in the reserves of A and B of \$25.44 each. Without going into detail we may suggest the line of development of auxiliary increments of credit expansion.

When A started its own expansion as the result of the deposit of checks drawn on C some of this new credit found its way back to the point of origin at C and another part found its way to B. At B it served as another initial deposit for the support of a series of expansions. Specifically as A expands during the first round it incurs an unfavorable clearing balance of \$23.98. As has already been pointed out, one half of this finds its way to C and the other half to B. This amount of \$11.599 which B receives is not to be confused with the amount which flows back to it in recurrent and ever diminishing tides as the result of its own initial expansion. The latter forces a similar balance of \$11.599 into the clearing house via A and thus A is able to begin a second series of successive expansions on the basis of the initial expansion of B, and the latter is in a similar position with respect to the primary expansion of A. These subsequent series of expansive movements have not only a reciprocal influence on expansion but also serve to inaugurate entirely new movements, from newly established centers. The entire process is one of diffusion in which credits flow back and forth until a new position

of equilibrium is attained on the basis of the increase in reserves made possible by the loan C obtained from the central bank. When a new position of rest is reached we find the following situation in the three banks:

	Loans	Deposits	Increase in Reserves
A	\$1,133.06	\$1,133.06	\$13.306
B	1,133.06	1,133.06	13.306
C	1,291.78	1,291.78	29.178
Total increase in loans and deposits			\$557.90
Total increase in reserves			55.79

We are interested chiefly in C which started this movement. Through direct primary expansion it was able to lend its clients \$100.00 on the basis of a loan from the central bank of \$55.79. Its coefficient of expansion in this initial stage is 1.79219. Through subsequent reciprocal expansion by other banks induced by its own initial increase in credit, it adds another \$71.17 to the accommodation which it grants its clients. This brings the coefficient of expansion as the result of direct line expansions up to 3.068. Finally when all the direct and indirect actions and reactions have registered, its total credit expansion amounts to 291.78 which yields a coefficient of compound expansion of 5.23. The other banks playing entirely passive rôles have expanded 13.306 per cent. These final coefficients will not, of course, be realized until the various expansions simple and compound have taken place. *There will be a certain amount of friction in the flow and counter-flow and the rapidity with which it will take place will depend largely upon the will to expand expressed by the community. It is the willingness of the latter to use the new credit rather than the ability of the banks to extend it which will determine the rapidity of diffusion.*

These calculations are intended to indicate the *potential* course of credit expansion. The writer does not wish to suggest that they have the force of inexorable physical laws. Their incidence will be modified by the moods of the business community, confidence in the party in power, the

influence. of Federal reserve leadership and such more tangible factors as gold movements, the cash requirements for circulation and the position of central bank reserves.

All this is very pertinent to the problem of central bank control. A and B have been able to realize substantial increases in their loans and deposits without being subject to the influence of the central bank. The latter may raise its discount rates but unless A and B choose to heed the implied warning for other reasons the rise will have no immediate effect upon them. To the extent that A and B are able to expand their own loans as the result of the initial expansion by C, is there created a mass of credit expansion over which the discount rate of the central bank has no visible direct control. On the other hand to the extent that all participate in the initiation of credit expansion is the coefficient of expansion of the individual bank raised until it approaches the ratio of deposits to reserves of the system as a limit. When they all expand equally the central bank would, theoretically, have to charge a discount rate equal to ten times the rate charged by banks to their own clients. On the other hand if only a fraction of the banks expand regulation of the expansion of those particular banks by the reserve bank through the discount rate becomes more of a possibility although its effective realization is still remote.

One of the formidable obstacles in the path of effective control is the fact that the central bank rate is rarely as high as that which the member bank charges even on its most favored loans. Furthermore even if only one bank in a system of thousands of banks expands it knows that it can extend multiple loans to the extent of 1.79219 times the amount of its own accommodation at the central bank so that the central bank rate in order to be theoretically effective would have to be at least 1.79219 times as high as the rate which the borrowing bank was charging its own clients.

If on the other hand our bank is one of one third of all

the banks which are expanding moderately, say 10 per cent to begin with, the rebound of expansive movements stimulated in other institutions by these expanding banks will soon enable this bank to increase its loans by an amount 3.068 times as great as its own reserve increases and the reserve bank rates would have to be pushed up to new heights in order to be effective. Finally after a new position of equilibrium has been reached in the community the bank finds its ratio of credit expansion to central bank loans may be as high as 5.23 to 1. It must again be emphasized that all this deferred expansion takes place without any further resort to the Federal reserve bank.

If two thirds of the banks expand, the premium on borrowings from the central banks, provided there is a demand for loans, becomes still greater and finally if all the banks expand in the same ratio bank clearings will offset each other and the only limit to expansion is that which the law governing reserves imposes. In 1920 one third of the banks were greatly overextended, one third moderately extended and the other third were normal. We had a condition very similar to that suggested above where all the banks were moderately extended and as a consequence high discount rates and progressive discount rates had little effect on the magnitude of the credit structure.

To sum this up we find two extremes of multiple loans on the basis of a given amount of accommodation from the central bank or the deposit of cash. At one end we find one bank in a system consisting of thousands which has expanded its loans. The reciprocal expansive effect stimulated by the inflation of its own loans is so widely diffused that the resurgence is not felt at all. Under such a condition the bank can lend only 1.79219 times as much as its own net addition to its reserve. At the other end we find a condition of uniform expansion where a bank can increase its own loans and deposits to an extent limited only by the law.

We have so far ignored the effect of cash withdrawals

on this process of expansion and our theory of credit growth could obviously be defective if we failed to consider this.

The Report of the Joint Commission of Agricultural Inquiry estimates that about one sixth of a customer's borrowing will ordinarily be required in cash.⁶³ Taking the ratio of equivalent demand deposits to money in circulation for a period of years we discover it is very close to five to one. Governor Strong in his testimony in the Stabilization Hearings offered a chart which furnished similar evidence of an identical ratio for a period of sixteen years.⁶⁴ We may therefore safely assume that one dollar out of every six drawn from a bank comes out in the form of currency and the five in the form of checks or to put it more accurately a bank will experience a loss of cash equal to one fifth of its increase in deposits. We know that 20 per cent of a given loan will remain on deposit but the amount that returns to the bank via other depositors and the amount that passes through the clearing house will depend upon the amount of cash withdrawn for use in circulation and this in turn will depend upon the amount by which deposits have been increased as a result of the loan.

Let X equal the amount of cash lost.

If 36.4 per cent of all checks drawn return to a bank via other depositors then

$(80 - X) .364$ equals the portion of a \$100.00 loan which returns to a bank for redeposit and

20 plus $(80 - X) .364$

 equals X

5

Solving X equals 9.157.

Thus the average \$100.00 borrowed from a bank in a reserve city which is expanding independently of the other institutions in the system will be divided into the four following elements:

⁶³ *Report of Joint Commission of Agricultural Inquiry, Part II, op. cit., p. 18.*

⁶⁴ *Stabilization Hearings, op. cit., p. 422.*

\$9.16 will be cash withdrawals.
20.00 will be left on deposit.
25.79 will be redeposited in the same bank.
45.05 will pass through some clearing operation.

As a result of this loan the bank will lose through direct cash withdrawals or through unfavorable clearing house balances \$54.21. In addition it will have to maintain a reserve of \$4.579 against increased deposits. Therefore an advance of \$58.789 from the Federal reserve bank will enable this bank to lend its customers \$100.00. This will give us a coefficient of primary expansion of 1.701. On the assumption that one third of the banks are extending their loans moderately the coefficient of mediate expansion modified for cash withdrawals becomes 2.90 and the coefficient of ultimate expansion becomes 4.97.

The following chart represents the course of a \$100.00 loan during the first cycle when currency requirements are taken into account and when they are ignored.

It must not be concluded from this discussion that banking is an unduly lucrative form of enterprise. It is true that we do not find many bankers in poor houses but when the returns of bankers are compared with those of other entrepreneurs it will be seen that their profits are only moderate. For a period of fourteen years from 1912 to 1925 inclusive the ratio of net profits to capital and surplus for all the national banks in the United States averaged 9.36 per cent which is certainly not excessive. Any implication from the possibility of multiple loans presented in this paper that the business of banking is attended by inflated profits is not fair to the banks. Granted that a given bank may be able to expand a loan from a Federal reserve bank three, four or five times it does not follow that the net operating ratio of the bank is $33\frac{1}{3}$, 25 or 20 per cent. Nor does it follow that a bank can offer savings fund depositors ten or fifteen per cent interest on their deposits because of the ability of the bank to partially expand such deposits. A hungry customer entering a restaurant and ordering bread and butter will receive two attenuated slices of the

Cash 9.16	Left on Deposit 20.00
Left on Deposit 20.00	Deposited by Others 29.12
Deposited by Others 25.79	Cleared 50.88
Cleared 45.05	
I	II

staff of life and what may appear to him as the nth root of a pound of butter for which he will be charged ten cents. If he is interested he can discover that the restaurant paid less than two cents for the food which it was serving him for ten but it would be erroneous for him to conclude that the operating ratio of the establishment was 20 per cent or that its profits were 400 per cent. Service, the cost of maintaining the plant, administration and a host of other items are all a part of the cost and must be considered before profits can be determined. The bank should be considered in the same light. The interest charges on its bor-

rowed reserves, in fact on all its reserves, constitute but a small fraction of its total costs. It has an impressive building to maintain, salaries to pay, interest on deposits and taxes not to mention less important items most of which overshadow the cost of central bank advances. Furthermore most of these costs continue whether the bank has many deposits or few. The preponderant importance of this overhead further emasculates the discount rate as a weapon of credit control. If all the expenses of a bank varied directly with its loans and if it were possible to allocate definitely to each \$1000.00 of expansion a proportionate part of the overhead expenses a rise in the discount rate might at times be very effective for it would then be in the position of the straw which broke the camel's back, that is to say, it would be the marginal factor which would cause the total cost to exceed the total return or at least to so encroach upon the total return as to destroy the profit incentive. This however is not the case. If a bank borrows \$1000.00 and is able to expand this three times in loans to its own customers its actual out-of-pocket cost to supply the means for this expansion would, at a rediscount rate of 4 per cent, be only \$40.00. At 6 per cent the interest payments received on these loans would be \$180.00 and the difference between the two it could apply to its fixed costs. We have here a situation very similar to that of the railroads. A rise in the discount rate has the same effect on the bank as the drop in rates at a competitive point had on the railroad. The latter would argue that as long as something was left over and above its direct money outlay it could afford to meet the cut of its competitors for something would be left over to meet general expenses. In the same manner a bank could, if it had demands for loans amounting to \$3000.00 which seemed safe, afford to pay up to 18 per cent on the thousand dollars of reserve credit necessary to effect these loans. Anything less than that would still leave a margin of profit to reduce the burden of overhead on other loans and business of the bank. This explains why banks continued to

borrow during 1920 even though rediscount rates rose to 15, 20 and in one case even to $87\frac{1}{2}$ per cent.⁶⁵ It also serves to explain, in part, the intensity of competition between banks for business for that competition is close kindred to that from which our railroads have suffered. Bank competition has never approached and is never likely to approach railroad competition in severity because the personal nature of the bond between the banker and his client is such as to prevent the latter from freely soliciting bids for accommodation from those who are able to provide it.

⁶⁵ *Interest charges of Federal Reserve Banks*, Senate Document 291. 67th Congress, 4th Session, Jan. 16, 1923, p. 9.

CHAPTER XXIV

PROGRESSIVE DISCOUNT RATES

Current Criticism of Federal Reserve Discount Policy—Dilemma of Board—Rule of Thumb Versus Judgment—Abuse of Common Credit Reservoir—Post-War Pressure to Expand—Inability of Board to Check Offending Institutions—Choice of Alternatives—Outright Denial—Flat Increase—Graduated Increase Based on Extent of Accommodation—Choice of Board—Phelan Amendment—Methods of Applying Progressive Rates—Reaction—John Skelton Williams—The 87½ Per Cent Case—Its Exploitation by Enemies of the Board—Progressive Rates and Deflation—Lesson of Experience—Appendix.

MANY attempts have been made to define the discount policy of the Federal Reserve Banks. These have been well intended efforts to shed light on the philosophy by which the Reserve Banks regulate their conduct in the matter of discount rates. Such an exposition does not lend itself to simple statement. In the first place the determining factors are incapable of accurate enumeration or precise measurement. In the second place the persistent attacks on the system have placed its spokesmen on the defensive and one may be permitted to doubt whether self-interest and a larger and altogether sincere and disinterested concern for the system itself would not inhibit a complete candor in the utterances of those who best know what the Reserve Banks are doing and how they are doing it. Finally, as far as policy goes, the system has been resting a trifle uncomfortably on the horns of a dilemma. These considerations have necessarily imparted to previous efforts to tell a waiting world what the discount policy of the Federal Reserve Banks has been, and is, a certain nebulous and non-nourishing character. Such defects cannot be discovered in the advice which the Reserve Banks have received—for which they have displayed a constant and peculiar ingratitude—as to what their policy should be. We are not going to embark

on another voyage of admonition to the Federal Reserve Board since we are quite certain that such jewels of wisdom as we might extend to this benighted body in Washington would meet the same fate suffered by the philanthropic overtures of our monitorial forbears.

Rather are we interested in the lessons of an experience which has so far been neglected and in the third of the above mentioned considerations. The dilemma which disturbs the system is this. Shall the discount policy of the Reserve Banks be administered by rules which may be published and made known to every applicant at the bar of reserve bank accommodation or shall that policy be administered in accordance with banking judgment? The former implies uniformity of treatment, the latter discrimination. In the former external circumstances of balance sheet and technical eligibility of paper will determine the success of an application. In the latter qualitative appraisal of the character of the applicant as well as his business will determine the issue. The former is capable of quantitative measurement, the latter is not. In the former the validity of refusal or approval can be easily defended. The cards may be laid on the table and any one may see whether they match or not. This is not possible in the latter.

As a matter of self-preserving policy, it would appear that the Reserve Banks should adopt the rule-of-thumb method. It would be easy to administer and defend. Opposed to this alluring avenue of escape from responsibility has been the earnest conviction of Federal Reserve officials that the public interest would be best served at times by the exercise of the faculty called banking judgment.

This fidelity to a higher sense of duty has found expression in the ruling of the Board that no bank is compelled to accept paper for rediscount even though such paper is in every respect compliant with the technical requirements of eligibility and that it has the right "to accept or refuse it in the exercise of its discretionary power."¹ While this is a truly valiant gesture, it must not be supposed that this

¹ Bulletin, Dec., 1920, p. 1303; Sept., 1923, p. 1003.

affirmed policy of the Board endows the regional banks with a paternal discrimination which can be exercised in accordance only with the trained and disinterested judgment of each bank. While such a course would be clearly desirable in many ways actual practice has fallen far short of the apparent authority granted in the decisions of the Board.

The Federal Reserve System is a public institution supported by monopoly monetary powers and exclusive privileges granted by the state, faculties and prerogatives to be exercised only in the general public interest. The traditional injunction to eternal vigilance as the price of liberty precludes the acceptance of the conduct of any public institution on faith alone, faith that the powers delegated will be exercised loyally, intelligently and competently. Loyalty to legislative intent and public interest, intelligence in the selection of means and emphasis of proper purpose, competence in the choice of instruments and the execution of measures, these are facts which must be demonstrated in open court to the satisfaction of a jury saturated with prejudice and laden with particular ignorance. The Federal Reserve System is open to every assault which sectional jealousy and group interest can suggest. It stands on a pedestal in the pitiless glare of a noonday sun exposed to the exacting scrutiny of uncharitable critics and malicious or stupid mischief seekers.

When, therefore, the Board announces and reiterates that each Federal Reserve Bank can "accept or refuse it in the exercise of its discretionary power" it does not necessarily follow that this means a precise control of the volume of accommodation extended to each bank. Yet, in spite of classic opinion to the contrary, a bank is an enterprise whose continuity and prosperity are dependant upon the exercise of skillful judgment. It is difficult if not impossible to follow a rule-of-thumb. Each case should be considered on its merits and what is safe accommodation to one bank may prove unwise to another, although in all external aspects the two cases are identical. Yet such a discrimination based upon banking judgment is very difficult to defend in open

court. The charge of unfairness becomes current. The imprint of its influence becomes set long before the explanation can erase it and in the subtle register of public opinion invisible but cumulative harm has been done. It is an axiom of history that the truth never catches up to a lie. These facts must be taken into account in order to appraise the true significance of this "discretionary power." To the credit of the Federal Reserve Banks it must be said that they have been realists and that the above declaration of power has been the expression of a hope rather than the exposition of an authority.

The statement of Governor Platt gives a much truer picture of the situation. "Federal Reserve Banks have no control over the amount of paper offered to them for discount and must, in accordance with Section 4 of the Federal Reserve Act, extend to each member bank such discounts, advancements, and accommodations as may be safely and reasonably made with due regard for the claims and demands of other member banks."²

The ostensible power to discriminate and the practical inability to do so opens the door to an abuse of the privileges which the reserve banks offer to their members. A Federal Reserve Bank is a co-operative enterprise owned and to a large extent guided by its collective proprietors. Each member contributes to the strength of the central institution an amount which varies with its own capital resources and its deposit liabilities. In an emergency each bank is entitled to appeal to this reservoir of banking strength to an extent commensurate with its own contribution to that reservoir.³ No ironclad limitation is implied but a due regard for the rights of the other associated members should admonish a member bank to resort to this

² Journal of American Bankers Association, April, 1923, p. 648.

³ A question may be here raised as to whether the Reserve Banks should accommodate a member bank to an extent commensurate with its *needs* or with its relative importance in the system. The former cannot be measured but the latter can. As a practical matter, therefore, it is easier to apply the latter as a standard. Furthermore, it is not the duty of the Federal Reserve Banks to supply a community with adequate banking facilities where those do not exist.

common reserve only in an emergency. To lean permanently on the reserve bank and to invoke assistance disproportionate to its own importance and beyond that required and used by other banks constitutes an unethical exploitation of common resources and is contrary to the spirit of the contract of association.

The danger of abuse did not become serious until after the War. The intoxicating nectar of expansion had been tasted by the business and banking elements of the country. It was found pleasing to their palates and stimulating to their nerves. The resources of the Federal Reserve Banks were tempting. A loan of \$1,000.00 from the reserve bank made possible the lending of \$4,500.00 to customers of the member bank.⁴ In 1916 in the state of Georgia the average rate of interest charged to farmers for loans on personal security was 9.6%,⁵ although the legal maximum in that state is 8%.⁶ Furthermore, since the bank felt that it was doing the farmer a great favor in allowing him to borrow, it granted itself a bonus and charged him a commission so that the actual average cost of a loan on personal security to a Georgia farmer was 11.8%. This is not an extreme case. In Oklahoma the cost was 15.6%.⁷ Throughout the year 1916, the Federal Reserve Bank of Atlanta stood ready to discount for all member banks agricultural and live stock paper with a maturity ranging from 91 days to 6 months at 5%. If the maturity were less than 91 days, the rate charged was only 4%.⁸ Assuming that there are applications for loans aggregating \$4,500.00, and that the small bank in the Atlanta district is compelled to borrow \$1,000 from the Atlanta Reserve Bank at 5%, the member bank would receive from its clients interest payments amounting to \$531.00. To establish a reserve which would make this profit possible called for the expenditure of \$50.00. This must strike the casual observer as a rather low operating ratio,

⁴ Report of Joint Commission of Agricultural Inquiry, Part II, p. 18.

⁵ C. W. Thompson, Bulletin 409, U. S. Department of Agriculture, 1916.

⁶ V. N. Valgren, Bulletin 1047, U. S. Department of Agriculture.

⁷ Op. cit., Bulletin 409.

⁸ Statistical Abstract, p. 244, 1925.

and so it is. Obviously, then, if a business boom is under way, and the demand for loans is active, fine, ethical distinctions concerning common rights in a fount of riches will be cast to the four winds.⁹ The United States in the year 1919 was the Eldorado of the small banker. The failure of Congress to continue the limitation on indebtedness of National Banks to the amount of their capital stock by amending section 5202, Revised Statutes, which excepted liabilities to Federal Reserve Banks, cleared the way. Member banks could lawfully incur indebtedness to a Federal Reserve Bank in any amount.

It must not be supposed that the Federal Reserve Banks were at all disturbed by the advantage which member banks were taking of their opportunities to make profits. If the member banks were charging excessive rates to their own clients that was unfortunate, but the Federal Reserve Board had no power and less inclination to remedy that injustice. This position was clearly stated by the Secretary of the Treasury in his address to the American Bankers Association on Oct. 20th, 1920. "Neither the Board nor the Reserve Bank has any discretion as to the loans which member or non-member banks may make or decline to make, or the rates at which they extend their accommodation to customers."¹⁰

However, if a very small number of banks were borrowing excessively and usurping the greater part of the lending power of the Federal Reserve Banks, then a proper regard for the interest of those banks which had not yet borrowed

⁹ For a different interpretation of manifold loans and profit possibilities, see Chester A. Phillips: *Theoretical Considerations Bearing on the Control of Bank Credit Under the Operation of the Federal Reserve System*. The Annals of the American Academy of Political and Social Science, Jan., 1922, pp. 195-199; also the same author's work, *Bank Credit*, pp. 32-74, Macmillan Company, New York, 1921.

A theoretical analysis of the possibilities of expansion on the basis of a given advance by the central bank has already been made in the chapter on multiple loans. The chapter on central bank rates and the price level contains an analysis of banking costs which may explain the disposition of the difference between the \$50.00 paid out by the bank and the \$531.00 received.

¹⁰ Federal Reserve Bulletin, Nov., 1920, p. 1125. Also see Report Joint Commission of Agricultural Inquiry, Part II, p. 53.

but might be compelled to, required the adoption of measures which would check the abuse of a privilege by the former and conserve the rights of the latter. This matter was discussed by the Board in its Annual Report for 1919, pp. 70-71. The Board felt that the banks which were making a disproportionate use of the lending power of the system should be compelled to pay an extra charge for encroaching on the rights of other members. Furthermore, this excessive resort to the reserve banks by a small number of banks was reducing the reserve ratio of these federal banks perilously close to the legal minimum in the early part of 1920, and in order to protect their own reserves as well as their ability to extend assistance when needed to other member banks, it was felt necessary to apply penalty rates to those banks which were trespassing upon the potential reserves of other members and jeopardizing the reserve banks' lines of defense.

The situation in the Kansas City District was typical.

"In January, 1920, 14 banks in Kansas City had absorbed 34% of the normal lending power of the Federal Reserve Bank and 9 Omaha banks had absorbed 23.5 per cent. Therefore, these two cities alone had absorbed 57% of the normal lending power of the Kansas City Federal Reserve Bank. There was a slight recession in the borrowings of these banks due to temporary seasonal deflation, in the early part of 1920, but by April, 1920, the 14 Kansas City banks were absorbing 50 per cent of the normal lending power of the Kansas City Federal Reserve Bank, and 9 Omaha banks were absorbing 23 per cent, representing a total of 73 per cent of the normal lending power of the Kansas City Federal Reserve Bank, and leaving only 27 per cent of the normal lending power available for the 1,063 other member banks in the Kansas City district."¹¹ Extremes of condition were found in all districts ranging from banks that borrowed as much as ten or fifteen times their basic line to those that did not borrow at all.¹² During

¹¹ Report of Joint Commission of Agricultural Inquiry, Part II, p. 56.

¹² *Ibid.*, p. 53.

this period of reconstruction and readjustment, the Federal Reserve Banks were eager to extend assistance to every form of legitimate enterprise, but they likewise saw a clear duty, buttressed by the necessity of maintaining their reserves, to prevent the devotion of their resources to speculative ventures. It is doubtful if the former could be assured and the latter avoided by the adoption of any measures whatsoever. As long as the will to take risks is present and the lure of great profit is beckoning, the implied obligations of a member bank to its reserve bank will be ignored.

There were three alternatives, a direct refusal of loans to an unwisely extended bank, an increase in the general discount rate and finally an interest rate to each bank depending upon the extent to which it used the collective resources of the reserve association to which it belonged. The first of these involved the arbitrary exercise of banking discretion in accordance with the affirmed ruling of the Federal Reserve Board. The second involved blanket penalty rates which would fall upon the innocent as well as the guilty but it would avoid the "discrimination" implicit in the first alternative. The final expedient was a compromise between the two.

There is very little evidence, of a quantitative character, concerning the outright denial of applications.¹³ That such refusals do occur is indicated by the decisions of the Board sustaining the right of particular Reserve Banks to reject applications for good reason or for no reason at all. During and after the War, the Federal Reserve Board and the reserve banks carried on a campaign of exhortation to prevent the use of funds for non-essential or speculative purposes.^{13a} This, however, was a general campaign. It was a plea directed to all banks and was designed to guide the

¹³ The Federal Reserve Bank of Dallas in 1919 rejected 7.8% of total items. See Willis and Steiner, *Federal Reserve Banking Practice*, p. 206. note. The fact that we have only this single figure from one Federal reserve bank and that we know nothing of the reasons for rejection deprives this information of much of the significance which it might have.

^{13a} See Annual Report, 1917, p. 9, and Bulletin, 1918, pp. 685-687.

flow of credit into legitimate channels. It was in no sense an admonition to particular offenders.

While it is not possible to offer statistics which will show to what extent direct action influenced the loans of member banks, it must not be supposed that such action was negligible. It is a type of very delicate control and calls for banking statesmanship of the highest order. The Federal Reserve System is a co-operative enterprise and that it may function properly and effectively, it is necessary for the reserve bank to maintain the goodwill of its members and secure their co-operation. This direct influence is achieved through personal contact between the officials of member banks and those of the reserve bank. It takes two forms. The first is a general contact where the reserve bank invites all the member banks or groups of them to conferences in which the policies of the reserve bank are discussed and explained. The reserve officials take the district bankers into their confidence. In the year 1920, the Federal Reserve Bank of New York held sixteen such conferences in which 496 banks were represented.¹⁴ While this was only a trifle more than one-half of the banks invited, such contacts are invaluable.

Complementary to these conferences is the work of the member bank relations department. This department consists of a small staff of men who by their work and special studies have become familiar with the letter and spirit of the reserve act. It is the special task of these men to visit the member banks and take up causes of complaint, dissatisfaction with the system, technical problems and a proper use of the facilities of the reserve bank within the spirit of the act. Governor Strong speaks of this work as an effort to get "personal control by personal contact"¹⁵

All this work while indicative of commendable and intelligent diplomacy on the part of the reserve bank is general and admonitory in character. It has obvious limitations. Therefore the reserve bank goes one step further. Whenever it appears that a bank is piling up a debt to the reserve bank

¹⁴ Hearings Agricultural Inquiry, Vol. II, p. 704.

¹⁵ *Ibid.*, p. 703.

which seems unwarranted, a responsible officer of that institution, the president or vice-president, is called to the reserve bank and the necessities of the bank are discussed. At the conclusion of the interview, the reserve bank official dictates a memorandum of the content of the interview, which is filed away as a part of the record of relations with that particular bank. To illustrate this, Governor Strong relates in some detail the experience with two large city institutions.

"Here is the case of another bank, one of the large New York City national banks, I think it is. The names are put in by letters. (Reading:)

"Mr. X dwelt particularly on the subject of the cotton crop, which will presently be harvested, and informed us that the prospective policy of bank No. 16—is to finance, principally for short periods, the sales of cotton to European ports; that this would be coming on rapidly within the next few weeks; that their money is tied up usually for short periods—three weeks to two months—and that barring some unforeseen episode, such as a longshoremen's strike, or something of that character, they do not believe their line will normally increase more than \$25,000,000 to \$50,000,000 additional.

"He stated, however, that in the event of abnormal conditions existing, it might be necessary for them to increase, temporarily, this estimate by \$25,000,000 or \$30,000,000.'

"This particular institution, and my memory is refreshed in reading this, is the largest handler of cotton paper in the United States, and they were looking forward to an emergency in the fall of last year when cotton had to be moved, and their point was that they might need \$25,000,000 or \$50,000,000, or in an emergency they might need as much as \$80,000,000 from the Federal Reserve Bank of New York, notwithstanding that they already were the largest borrower.

"Here is the record of a similar interview, August 13, 1920, merely an inquiry as to what was transpiring. The reply was that the increased demands made upon the reserve banks were occasioned by three factors:

"1. A loss of deposits, amounting to approximately \$100,000,000 in the past six months, two-thirds of which is to the interior, and one-third in their foreign bank accounts. That is the balances that foreign banks carried in this country.

"2. The steady demand for commercial accommodation from domestic sources.

"3. The financing of foreign trade import and export bills. This officer further stated that while their borrowings are now very heavy, amounting to \$114,000,000, it is the belief of the officers of his bank that it may be necessary within the next 60 days to go somewhat higher.

"They do not, however, expect this extra borrowing to go much beyond \$25,000,000 additional. We called the attention of the officer of the bank to the fact that they had quite a large amount of gold in their vault, and we did not think that it was a very good plan for us to be lending them money to enable them to carry gold in their vault, so they deposited some of it with us and reduced their borrowings." ¹⁶

Here is an admirable exemplification of the theory of elasticity underlying the Federal Reserve Act. Although this bank was already a heavy borrower before attempting to meet the seasonal requirements of the cotton crop, a careful inquiry into the purpose of additional loans revealed that they were to be devoted to an entirely legitimate end. No insurmountable barrier was interposed between the borrowing bank and the reservoir of credit. An attempt on the part of the reserve bank to deny additional applications for credit would have been not only unwise but possibly disastrous. This experience in so far as it is typical illustrates a number of things.

1. The elasticity of our banking system under the Federal Reserve Act.
2. The careful supervision of heavy borrowers by the reserve banks.
3. The futility of the restrictive influence of a higher discount rate.
4. The value of detached suggestion once the co-operation of the member bank has been won, e.g., the deposit of some of its gold by bank No. 16.

The rapid expansion of bank loans in the latter days of the War and the desire of the Treasury to float loans at the lowest rate added to inherent inadequacy of rate control

¹⁶ *Ibid.*, p. 707.

and made it necessary for the reserve banks to resort to "direct action" of the type just illustrated. Some attempts along this line were made as early as August of 1918.¹⁷ As to the defects of this supplementary weapon of control, Governor Strong said:

"Abandoning rate control as impossible, you then introduce the element of human error, because it is quite impossible for the management of this system, dealing with 10,000 member banks, to reach them all. They are the only ones that we reach directly, and there are 20,000 banks we do not reach, because they are not members. It must be borne in mind that considering the human element, there is also the exaggeration of the chance of error, because if you cannot control by rate, then you have to deal individually with the people who are abusing, if you please, the system. That I regard as having been done as effectively as such an imperfect method could enable it to be done. I never considered that it was possible to make it effective. The widest possible propaganda and the widest educational work could not make it entirely effective."¹⁸

We directed attention to the abuse of the system by certain banks which Governor Strong mentioned above. This abuse could not be localized. It was general. In fact there were cases where a bank on one corner was not borrowing at all from its reserve bank while the bank on the other corner across the street in the same town was borrowing to excess.¹⁹ So that the exercise of banking judgment not only renders the Federal Reserve Banks more susceptible to political assault but also is ineffective because of the physical dimensions of the task.

The second alternative was a general increase in the discount rates or a greater stringency in the eligibility requirements or both. Such measures would operate against all applicants, those who were resorting moderately to the reserve banks as well as those who were bent on making hay while the sun shone to the contravention of sound precepts of banking. There were many bankers who were conducting

¹⁷ *Ibid.*, pp. 766-769.

¹⁸ *Ibid.*, p. 766.

¹⁹ See testimony of Governor Miller, F.R.B., Kansas City, *Ibid.*, Vol. III, pp. 751-752.

their business in accordance with the finest traditions of banking who, from time to time, availed themselves of the rights which they as constituent members of the association undoubtedly had. A general increase in the difficulties of borrowing made necessary by the imprudent expansions of the more grasping members of the fraternity would subject them to a penalty which they did not deserve. The report of the Joint Commission of Agricultural Inquiry²⁰ indicates that approximately one-third of the banks were greatly overextended and borrowing heavily from the reserve banks, one-third were moderately extended and borrowing accordingly while the other third were in such a condition that no borrowing was necessary. The excesses of the first by bringing about a general increase in the rates would fall with equal weight upon all borrowing banks. Governor Harding felt that it was this first third which required checking, and if a rise in the cost of accommodation could accomplish that, then that particular third should be compelled to pay a higher rate.

Accordingly, a bill was drafted and placed in the hands of Representative Phelan containing our third alternative, known as the progressive rate of discount. The rate would vary as the borrowing of a particular member bank exceeded the normal amount of credit to which it was entitled, and in accordance with the amount of that excess. The Federal Reserve Board was itself directly responsible for this measure and succeeded in obtaining its passage in Congress.²¹

The theory that a rise in the interest rate would discourage borrowing was about to receive a test as careful and complete as the laboratory of politics and economics will permit. The premise that we start with is that an increase in the rate is an increase in the cost, an increase in the cost will discourage the demand, and, since the demand in this case is for accommodation at the Federal Reserve Banks, applications for such accommodations will decline. This is

²⁰ *Ibid.*, Vol. II, p. 87.

²¹ Willis, H. Parker, *The Federal Reserve System*, p. 1341.

a good syllogism provided we accept the premise that an increase in the cost will reduce the demand. Without going into this fully at this time, let us say that it is accepted economic doctrine and that Governor Harding could properly feel that he was working on good theory.

The Phelan Act extends this theory one step further and the extension is perfectly logical.²¹ If an increase in the rate discourages borrowing, and there is too much borrowing, and this excessive borrowing is due to the overextension of but one-third of the member banks, why not localize the effect of the penalty implicit in the higher rates and apply them only to those banks which are borrowing to excess? If three men are haled before a justice because of a general increase in reckless driving in the community and it is proved that one of them drove fast and recklessly, that the second drove fast but carefully, that the third drove slowly and carefully, shall the judge fine all three drivers on the ground that the first driver has already been convicted of reckless driving, that the second might drive recklessly if not fined, that the third will be prevented from ever driving beyond the bounds of caution if admonished by fine? If the fine proves a deterrent or is supposed to be a deterrent, then, reason no less than justice will require its application only to those who have proved by their conduct that a deterrent is necessary. So reasoned the Federal Reserve Board and H. H. 12711 became the law on April 13, 1920.²² For the Congressional debate on the subject, not much can be said. The House Committee on Banking and Currency had reported the amendment favorably²³ and the objections in Congress centered chiefly about inconsequential and imaginary fears.²⁴

The amendment to section 14, known as the Phelan Act of 1920, follows:

²¹ This amendment permitted the Federal Reserve Banks to charge discount rates which varied with the degree of encroachment upon the common reserves of the borrowing bank. See appendix at end of this chapter for complete description.

²² See Report No. 678, 66th Congress, 2nd Session.

²³ *Idem.*

²⁴ Congressional Record, Vol. 59, pp. 5057-5070.

"(Public—No. 170—66th Congress, H. R. 1,271. An act to amend the act approved Dec. 23, 1913, known as the Federal Reserve Act.)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

That section 14 of the Federal Reserve Act as amended by the acts approved September 7, 1916, and June 21, 1917, be further amended by striking out the semicolon after the word "business" at the end of subparagraph (d) and insert in lieu thereof the following: "and which, subject to the approval, review, and determination of the Federal Reserve Board, may be graduated or progressed on the basis of the amount of the advances and discount accommodations extended by the Federal Reserve Bank to the borrowing bank." Approved April 13, 1920.²⁵

In the words of the Federal Reserve Board, this gave the Federal Reserve Banks legal authority to apply pressure upon the particular banks which exceeded their basic amounts.²⁶

We have already indicated that this was a logical development of the theory that a rise in the discount rate will discourage borrowing and that a fall will encourage it. In fact it is a concentrated and specific application of that theory. Professor Willis takes issue with the Board and considers it

"another serious and regrettable departure from the theory of the Federal Reserve Act. That theory had been based upon the idea of unlimited discount of all offerings of paper of the eligible varieties, with general advances in rates or narrowing of eligibility for the purpose of applying a check when necessary. The Phelan Act adopted the opposite point of view and shaped its policy upon the theory that the best form of check to an over-rapid growth of credit was to be found in a cash penalty, afforded by the exacting of a progressive rate of discount from each customer."²⁷

This criticism is hardly fair. In the first place, under the operation of the Phelan Act, any bank could bring eligible paper to the Reserve Bank and have it discounted in un-

²⁵ F. R. Bulletin, May, 1920, p. 498.

²⁶ *Ibid.*, p. 448.

²⁷ Willis, H. Parker, op. cit., p. 1342.

limited quantities and that some banks availed themselves of this privilege to the extent of ten or fifteen times their own capital has already been pointed out. Insofar, therefore, as the privilege of unlimited discount constitutes one of the rocks upon which the system is founded, the Phelan Act certainly did not disturb it. It has already been indicated that a general advance in the rates penalizes the conservative banker no less than the one who is attempting to abridge the path to wealth. A general application of a higher rate tends to dilute the effect of the corrective. It is like imposing a fine upon an entire community because a small fraction of its citizens has violated the laws of the land. As to narrowing the eligibility of paper, this is justifiable only on the fallacious ground that it tends to force the flow of credit into meritorious uses. The loan which a member bank secures from its reserve bank is only the raw material from which advances are fabricated and sold to its own clients. There is no assurance whatsoever that accommodation extended to a member bank on technically perfect paper is to be used as the basis for further loans which would conform to the requirements specified in the Federal Reserve Act. The attempt to control the credit policies of member banks through a constriction of eligibility requirements of paper presented for rediscounting has been one of unmitigated futility.²⁸

For better or for worse the reserve banks could now use a more flexible method of control. It is to be noted that this power was permissive and not mandatory and that it could be used only with the approval of the Federal Reserve Board. The manner of its application was left to the discretion of the Board and the local reserve bank. In the debate in Congress, Mr. Husted suggested that the basic line ²⁸ be defined in the bill.²⁹ Mr. Wingo, a veteran member of the

²⁸ Reserve Bulletin, Nov., 1920, p. 1125; Report, Joint Commission of Agricultural Inquiry, Part II, p. 53; Stabilization Hearings, H.R. 7895, Governor Norris, p. 385.

²⁹ The basic line refers to the normal amount which a bank may borrow without incurring penalty rates.

³⁰ Congressional Record, Vol. 50, p. 5063.

House Committee on Banking and Currency, having in mind the limitation on National Banks contained in section 5202, Revised Statutes, suggested a basic line equal to the capital and surplus of each bank.³⁰

The opportunity was immediately seized by the Federal Reserve Bank of Kansas City and progressive rates were put into effect on April 19, 1920. The Dallas bank followed on May 21st, the St. Louis bank on May 26th, and Atlanta on May 31st. With minor modifications Kansas City, St. Louis and Atlanta used the same scale of rates and applied them in approximately the same fashion. The basic line of the member bank was equal to the investment of the member bank in Federal Reserve Bank stock plus 65% of its average reserve balance multiplied by 2.5. In the Dallas district, the basic line was equal to the paid up and unimpaired capital and surplus of the borrowing bank. In all four cases the scale of the super rates was the same, i.e., $1\frac{1}{2}\%$ on the first 25% of borrowings in excess of the basic line, 1% on the second 25%, etc. For a full description of the progressive rate plans in effect in each of these four districts, see Appendix A at end of chapter. In all four districts paper based upon government bonds paid only the normal rate which offered a substantial loophole for all the banks.

In spite of this considerate restraint in the exercise of a reasonable check, a tremendous hue and cry were raised, the echoes of which reverberated for years. It was unfortunate that the progressive rate was applied in only four districts, all of which had predominant agricultural interests. When the depression came, the highly audible spokesmen of the farmers saw the hand of sinister conspiracy in the progressive rates. It was a part of the plot to ruin the farmers and in the general hunt for a scapegoat on which could be fastened the responsibility for the crash, the trail led to the Federal Reserve Board. In a number of cases the wholly irresponsible conduct of member banks led to the application of rates in their particular cases on small fractions of their borrowings which on the face seemed exorbitant. Thus

³⁰ *Ibid.*, p. 5069.

the X National Bank in the Atlanta district borrowed an amount equal to almost seven times its capital stock. At the same time, it permitted its reserve balance to drop to \$86.00 so that its basic discount line was only one-sixth as great as it would have been if it had maintained the reserve required by law. This bank, therefore, paid a superrate of 81.5% or a total rate of 87.5% on a small fraction of its total borrowings for a period of two weeks. The superrate applicable to all borrowings was 27.44% before the Federal Reserve Bank rebated all discount charged in excess of 12%. After this rebate was made the superrate on all borrowings was 3.88% and the total rate on all accommodation 9.88%.³¹ The rebate was not made until sometime after the graduated rate plan had been abandoned.

This particular bank had a capital of \$45,000³² while its average borrowings from the reserve bank at Atlanta during the period from June 15, 1920 to Oct. 15, 1920 were \$149,830³³ on which it paid an average rate of 8.80032% per annum. It operates in a district where the average cost of a loan to a farmer is 12.4%.³⁴ How much this particular bank charged its own clients is not known. For some inscrutable reason the plight of the farmer where he is transfixed by the usurious interest charges of his local banker has never been able to provoke the tears of anguish which flow so readily at the slightest behest of the country banker. But let the Federal Reserve Banks charge such a banker a slightly higher rate of interest because he is employing the resources of the reserve bank rather than his own capital and the floodgates of indignant rhetoric are loosed. Through some occult psychic legerdemain the brazen attempt of this Atlanta bank to use the collective assets of other banks for its own selfish purposes became a high crime of the Federal Reserve Board.

Every schoolboy is required to learn the principles of Newton, one of which is that every action has an equal

³¹ *Interest Charges of Federal Reserve Banks*, Senate Document 291, 67th Congress, 4th Session, Jan. 16, 1923, p. 9.

³² *Ibid.*, p. 13.

³³ *Ibid.*, p. 10.

³⁴ C. W. Thompson, Bulletin 1409, U. S. Department of Agriculture.

and opposite reaction. The rule which is so fundamental in the physical world has a fair counterpart in the economic and social experience of mankind. When, therefore, the inevitable compensation of the post war saturnalia of expansion commenced, it resulted in much suffering, extreme in specific cases and quite general in its depressing effects. People are loath to acknowledge that they have been victimized by their own inadequate perception of causal circumstance and sequential fact. Suffering can be caused only by wickedness and once that grief and loss are established the culprit must be sought. And so it was with deflation in these United States. Who were the wretches that engineered this widespread misery? The hunt was on. The Federal Reserve Board seemed to some rascals and to many respectable elements the providential sacrifice to appease the wrath of the unfortunate. The fact that an attack upon it would deprive no statesman of votes certainly did not detract from its suitability as an offering.

Although sobering statistics and explanations were directed at the assailants, the armor of prejudice, ignorance and self-interest proved impenetrable. In reply to a banker's charge that the decline in prices and the consequent distress were due to the discount policy of the Federal Reserve Banks, Governor Seay said: "This 'deflation' or decline in prices was not peculiar to our own country, and to attribute such declines here or in other countries to the policy of the Federal Reserve System is arbitrarily to assign to it an influence which it does not and cannot exercise, but which is the result of those laws of action and reaction which have been at work from the beginning of things."⁵⁵

To a considerable extent the hunters were given the first scent and spurred on in their pursuit by a former member of the Board itself, John Skelton Williams. While the criticism in Congress of the progressive rates was neither active nor virulent during 1920⁵⁶ Mr. Williams was a veritable Don Quixote levelling his lance against the Federal Reserve

⁵⁵ Congressional Record, July, 1921, p. 4063.

⁵⁶ *Ibid.*, Dec. 20, 1920, pp. 563, 565.

windmills.³⁷ With the passage of another year, Mr. Williams has burst into the full bloom of indignation. Speaking before the Augusta Board of Commerce and the Georgia Press Association on July 14, 1921 (Bastille Day) of the bank whose excessive borrowings had subjected it to a total rate of 87½% on a portion of its indebtedness, he gives us an entirely different picture of the situation.

"A valiant little country bank in Alabama striving and straining to help its former customers, needed \$112,000 to meet the needs of its community in crop moving time, the latter part of September, 1920, and that little bank was charged for the use of that money for about two weeks by its Federal Reserve Bank an average rate of about 4 per cent—not 4 per cent per annum, gentlemen, but about 4 per cent per month on an average; in fact, the rate charged for a portion of that money was actually 87½% per annum."³⁸

"The rates charged amounted to 'from two to five times as much as the rates charged by any government bank in any civilized country on the globe. Gentlemen, these amazing rates are brutal, wholly without excuse.'"³⁹

"The official record will show that while the reserve bank collected \$2,100 (equal to 8 per cent on the bank's entire capital stock for 12 months) from a little bank in your adjoining state of Alabama for the use of about \$112,000 for two weeks in crop-moving time a year ago, a big bank in New York, whose funds were largely employed in speculative operations and deals, for the same cash consideration, or, say, \$2100, was given the use of about \$800,000 for the same time."⁴⁰

While the facts are substantially as stated by Mr. Williams, he distorts the truth by the familiar device of omitting a part of it. He omits to state the relative importance of the \$112,000 loan to capital reserves and basic line in the one case and the \$800,000 to the same elements in the other. As logic it compares favorably with the argument that since all men are created equal the imposition of a million dollar

³⁷ See his address before annual convention of Maine Bankers' Association, at Bangor, Me., June 26, 1920, reprinted in *Hearings, Joint Commission of Agricultural Inquiry*, Part 13, pp. 10-18, *Task Titanic—Strength Supreme—Faith Invincible*.

³⁸ Congressional Record, July 20, 1921, p. 4087.

³⁹ *Idem*.

⁴⁰ *Idem*.

tax on one individual and none on another proves that our system of taxation is inequitable.

Insofar as the above strictures are directed against the excessive rates charged for accommodation they may be established on some basis of justice. The 87½% discount rate was a logical development of the proposition that a rise in the interest rate discourages expansion and that a fall stimulates it. This extreme case demonstrates at least in this particular instance the futility of this theory of control. To the extent that this enormous rate proved impotent in checking a demand for accommodation born of imperative necessity to that extent was it an unwarranted inroad on the earnings of this bank. It is quite probable that it borrowed no less than it would have borrowed if the discount rate had been ten or eight or six per cent. It is quite probable that this bank charged its customers no more while it was paying 87½% than it did while it was paying six per cent.¹¹ The first probability is the necessary effect of the second and for the second there is good evidence. These banks charged all the law would allow and the traffic would bear. A rise in the interest which the bank had to pay to its own reserve bank would not, therefore, affect the demand for loans made upon it by its own clients. The effect of these increasing rates is precisely the same as the effect of an increase in cost on monopoly profit. It does not change the price of the product or the demand for it. Profits alone are reduced.

If this progressive rate was employed to diminish the loans of this particular over-expanded member, then the device was directed to a purpose which it did not here accomplish and had an entirely unintended effect. This effect could be defended but on different grounds. The Alabama bank which had so provoked the sympathy of the former Comptroller was probably an institution organized for profit.

That is an entirely legitimate motive. While the billboards of the country side and the advertising pages of newspapers

¹¹ Hearings, Agricultural Inquiry, Vol. III, p. 751.

and periodicals inform us that the manifold forms of enterprise in this country are interested primarily in service to the public, it must not be assumed that this is the only motive and one may even be permitted to question the primacy of that motive without winning suspicion of cynicism. Frankly, the size of the dividend is the criterion of entrepreneurial success and its universality is such that it requires no defense.

Our bank in Alabama has a capital of \$45,000 and that makes it possible for the bank to do a certain amount of business which yields a profit and enables it to pay its stockholders. The amount of loans has and should have some relation to a bank's capital. If a bank discovers opportunities to make advances not warranted by the size of its capital and imposes upon a common fund in order to realize on these opportunities it has some obligation to the associates who created the fund to which it has been able to resort and through which its profits have been augmented. It is not unfair to suggest that some of these extra profits should be returned to those who have made them possible. The latter are the clients of the bank whose demands have constituted the opportunity for additional profit and secondly the members of the reserve fraternity whose assets have been used by this bank. The inflexibility of local interest charges makes it improbable that the first class will benefit and the limitation on dividends to member banks makes it impossible for the second to share in the guerdon. However, if the reserve bank levies additional charges upon the member bank such charges will swell its profits and will therefore increase the franchise tax payable to the government. Thus, in the end, the extra profit will be generalized and the public benefited. Thus the progressive rate as an instrument for the regulation of expansion becomes in fact an excess profits tax. In its latter capacity, it can be defended more readily than in the former.

It can be seen that the extreme application of the progressive rate either on the grounds of credit control or profits tax lends itself to political pyrotechnics. Senator Watson of

Georgia, using the text furnished by Comptroller Williams ⁴³ and carrying his audience back to ancient Rome and the assassination of Cæsar, which incident was discovered in his hands to have a direct relation to excessive interest charges, said:

"The Steel Trust made \$21,000,000 clear during the last quarter, while the farmers of the country, the wage earners, the bread winners, the men who have to sell their muscle, the women who have to sew for bread, the children who have to work, the whole mass of the population are suffering from the lack of money which the Federal Reserve Board secretly, cruelly, despotically, criminally, and ruinously retired from circulation." ⁴⁴

And so forth.

The Joint Commission of Agricultural Inquiry which was appointed to convict the Federal Reserve Board for everything that went wrong during 1920 and 1921, and which ended in a reluctant vindication of that body, did not have the time for a detailed inquiry into the operation of the progressive rates in the four districts where it was applied. Its study of the Kansas district was fairly exhaustive and it may be assumed that the experience there had its counterpart in the other districts. ⁴⁴

"In the period from April 19, 1920 to December 31, 1920, banks which had not been previously borrowing increased their borrowings to 12 per cent of the normal lending power of the Kansas City Federal Reserve Bank. During the same period the number of banks borrowing in the Kansas City Federal Reserve district increased from 178, or 16.8 per cent of all the banks, to 416, or 38.3 per cent of all the banks. In the same period, the amount borrowed by all borrowing banks increased from \$106,851,047 to \$117,328,475. While banks not borrowing previously to April 19, 1920, when the progressive rate became effective, were increasing their borrowings, the borrowings of the 14 Kansas City member banks paying the progressive rate decreased to 36 per cent of the normal lending power of the Kansas City Federal Reserve Bank, and the borrowings of the 9 Omaha member banks paying the

⁴³ Mr. Williams is also reputed to have furnished the material for many of Senator Heflin's attacks.

⁴⁴ U. S. Senate, Aug. 5, 1921—Congressional Record, p. 4714.

⁴⁵ Report of Joint Commission of Agricultural Inquiry, Part II, p. 56.

progressive rate decreased to 13 per cent of the normal lending power of the Kansas City Federal Reserve Bank." ⁴⁵

One important effect of the application of the progressive rate in the Kansas City district was to reduce the borrowings of the large banks in Kansas City and Omaha and place that reduction at the disposal of other banks which had previously not applied to the reserve bank for assistance. Since the reserve ratio of the Kansas City Reserve Bank was below forty per cent during most of this period, this check upon excessive borrowers was very important. Lest this be too hastily interpreted as support of the efficacy of the discount rate, it is only fair to suggest that a good many of the country banks which appeared to be non-borrowing banks prior to the innovation of the progressive rate had actually been taking care of their needs by loans effected through city correspondents and that the large loans of the banks in Kansas City and Omaha were only partly on their own account, the rest being for the account of country banks who found it more convenient to tap the resources of the Federal Reserve Bank in this roundabout fashion. The application of the penalty rates, however, deprived this arrangement of much of its charm and the country banks were advised in the interest of economy to make their arrangements directly with the Federal Reserve Bank. This interpretation was supported by the testimony before the Commission and is acknowledged in its report.⁴⁶

What effect did the progressive rate have upon the total borrowings in the districts where it was applied? In accordance with the interest theory of control, it might be assumed that the banks in the districts where the increasing interest rates were in effect would check expansion, would show the first evidence of deflation and would be in the vanguard of that movement. The table on the next page gives a comparison of the course of loans in the four progressive interest districts, Atlanta, St. Louis, Kansas City, and Dallas, in the four districts where a flat rate of 7% prevailed during most

⁴⁵ *Ibid.*, pp. 56-57.

⁴⁶ *Ibid.*, p. 53.

of this period, Boston, New York, Chicago and Minneapolis, and the remaining four banks in Philadelphia, Cleveland, Richmond and San Francisco where a uniform rate of six per cent was maintained throughout this period. The progressive rate group shows a slight increase in the total of purchased and discounted bills while the 7% group shows at the end a slight decrease. In each group there have been fluctuations in both directions throughout the period so that the condition of the total at the end is not very significant. In the remaining group of districts where a six per cent rate prevailed there was a consistent decrease in the total holdings amounting to almost \$100,000,000. We do not mean to imply by this comparison that the reversal of theoretic expectation proves that a higher discount rate in one group of districts and the prevalence of penalty rates in

DISCOUNTED AND PURCHASED BILLS HELD BY GROUPS OF
FEDERAL RESERVE BANKS

	Group 1		Group 2		Group 3		Total
	A	B	A	B	A	B	
May 28.....	1,752	1,686	424	510	762	742	2,938
June 4.....	1,794	1,732	420	499	760	743	2,974
June 11.....	1,769	1,706	415	488	742	732	2,926
June 18.....	1,603	1,564	405	456	686	674	2,604
June 25.....	1,708	1,682	415	468	707	680	2,830
July 2.....	1,793	1,785	421	475	721	673	2,935
July 9.....	1,777	1,782	421	462	736	690	2,934
July 16.....	1,729	1,705	413	484	705	658	2,847
July 23.....	1,709	1,685	414	501	700	637	2,823
July 30.....	1,708	1,677	413	515	716	645	2,837

Group 1 shows totals for the Boston, New York, Chicago and Minneapolis Federal Reserve Banks, all of which have raised their commercial discount rate to 7 per cent.

Group 2 shows totals for the Atlanta, St. Louis, Kansas City, and Dallas Federal Reserve Banks, all of which have adopted a system of progressive discount rates.

Group 3 shows totals for the remaining four banks, i.e., the Federal Reserve Banks of Philadelphia, Cleveland, Richmond, and San Francisco, which have neither raised their discount rates during the more recent period nor adopted a system of progressive discount rates.

Column A shows actual totals of discounted and purchased bills held.

Column B shows adjusted totals of discounted and purchased bills.

Federal Reserve Bulletin, August, 1920, p. 777.

another group was the cause of a failure of the total of advances in these two cases to diminish. It might be argued that if these higher rates had not been in effect there might have been a substantial increase. This on the face of it is purely speculative and not susceptible of demonstration. The fact remains that in the group of districts where a flat rate of six per cent was used, there was an appreciable diminution in loans to member banks. What this experience does tend to establish is that if there is a declining demand for loans due to the infinite variety of trade conditions which affect the demand for bank credit the encouragement evident in a lower interest rate is not a sufficient incentive to stimulate the demand for loans on the part of the clients of member banks who are not at all likely to pass the reduction in cost on to those clients. On the other hand, an increase in the discount rate by the reserve bank is not likely to discourage the demand for loans where general trade conditions or the vicissitudes of business enterprise make bank accommodation imperative, particularly where the increase in the charge to the member bank cannot be passed on to the customer since the bank is already getting all the interest which the law and circumstance will allow, and where the extra charge is a negligible part of the profit which the member bank is able to make from the loans which it in turn can extend on the basis of its own discount with the reserve bank.

Did the progressive rates hasten deflation in the districts where they were in effect? Did liquidation proceed more rapidly in those districts than in the others where the progressive rates were not applied? The opinion of the Joint Commission based upon the evidence submitted was:

"That the amount and rate of deflation was not controlled by the application of the progressive rate. The rate of deflation was 35 per cent in the tenth district, which had the progressive rate, and 35 per cent in the Minneapolis district, which did not have the progressive rate. There was a decrease of 30 per cent in the borrowings of all banks in the Chicago District, which did not have the progressive rate, as against a decrease of 12 per cent

in the Dallas district, and an increase of 26 per cent in the Atlanta district (incomplete), in both of which the progressive rate was effective." ⁴⁷

This experience tends to show that at this time there were other factors influencing the general credit situation of far greater weight than the discount rates of the Federal Reserve Banks even where the influence of those rates was concentrated in such a way as to affect those member banks most which were borrowing to excess. It suggests that the influence of the interest rate as a deterrent or a stimulus to bank expansion or contraction has been exaggerated. In the Atlanta district, where we find the most severe application of the interest control theory, the total of loans from the Federal Reserve Bank actually increased 26 per cent.

There is one more test which we can apply. If an increase in the interest rate is supposed to discourage expansion, then it should be possible to select many individual cases where the general rule is illustrated, i.e., if an increase in the rate results in a general decrease in borrowing, then the borrowings of a large number of banks subject to the increased rate should show a diminution of loans from the Federal Reserve Bank. Acting Governor Platt in his reply to Senate resolution,⁴⁸ requesting information on effect of progressive rates, already referred to, submitted a complete statement of the course of the progressive rates charged to each bank, in the four districts where that rate was in effect, which borrowed beyond its basic line and therefore became subject to penalty rates. The theoretical expectation in the case of each such bank is that as the discount rate is raised the accommodation demanded declines. We have not only moderate cases where the rate charged increases by fractions of one per cent but also a substantial number of extreme cases where the rates mount to 5, 10, 20 and even 81½% above the normal rate. Pedagogically, an exaggerated example is often an effective means of illustrating a theory, e.g., the common market price problem. The economist rarely is so fortunate as to have a laboratory in which he can create

⁴⁷ *Op. cit.*, p. 68.

⁴⁸ Senate Resolution 335, Dec. 6, 1922.

artificial situations for the confirmation or repudiation of abstractions. In the case of the progressive rate circumstances have been unusually charitable.

In the four districts where progressive rates applied, 227 banks borrowed beyond their basic lines during a part or all of the time the penalty rates were in effect. Governor Platt gives a complete statement of the borrowings of each of these banks and the rates applicable to the various increments in excess of the basic amounts.⁴⁹ A large number of banks borrowed to excess for but short periods of time, one or two weeks, while others were incurring penalty rates throughout the entire period. It is impossible to say whether the banks which did not borrow at all or did not borrow to excess were deterred by the prospect of penalty rates. The great majority of members of the system do not borrow to-day, although the rates are very low and the expansibility of each loan from the reserve bank so decided as to offer handsome profit to the borrowing bank. The average banker to-day would explain that he is not borrowing from his reserve bank because there is no demand from his clients for

ATLANTA—FEDERAL RESERVE DISTRICT No. 6⁵⁰

Member Bank No. 32. (Capital and surplus \$1,250,000)

	<i>Daily average borrowings</i>	<i>Average rates charged including superrates</i>
May 28-June 3.....	3,886,230	6.42
June 4-10	3,395,877	6.63
July 23-29	2,540,200	7.57
July 30-Aug. 5.....	3,487,471	8.67
Aug. 6-12	4,014,770	8.89
Aug. 13-19	4,325,702	9.13
Aug. 20-26	4,059,559	8.82
Aug. 27-Sept. 2.....	3,579,987	8.45
Sept. 3-9	3,135,759	7.63
Oct. 22-28	3,117,645	7.50

Member bank No. 41 (Capital and surplus 70,000)⁵¹

Sept. 1-15	215,940	6.64
Sept. 16-30	219,752	6.99
Oct. 1-15	214,016	7.03
Oct. 16-30	249,867	14.07

⁴⁹ Interest Charges of Federal Reserve Banks, op. cit., pp. 13-91.

⁵⁰ *Ibid.*, p. 21.

⁵¹ *Ibid.*, p. 25.

accommodation which he cannot satisfy with the resources of the bank. Lower reserve rates to member banks do not necessarily increase the demand for loans from the communities which they serve. On the other hand, there were during this period a large number of banks whom rising discount rates did not deter. See opposite page.

There is here no discernible relation between the amount borrowed and the rate of interest charged. It can always be said that if the increased rate had not been applied the loans would have been much greater. This is an insipid hypothesis and assumes the conclusion which we are trying to determine. In the case of Bank No. 41 an increase in total borrowings of approximately \$35,000 at the beginning of the second half of October resulted in a doubling of the rate to be paid not only on the additional borrowing but on the total amount borrowed so that the penalty attributable to the borrowing on the margin amounted to 28%.⁵² Since the penalties were published and the borrowing bank knew what it would have to pay, it must have reasoned that the value of the additional accommodation exceeded its cost. As this is a bank in the Atlanta district, we may apply to it the data presented on p. 379. If circumstances in 1920 were the same as in 1916, then this particular bank could afford to pay a rate of 53.1% on the additional \$35,000 before the interest charges on such accommodation equaled the amount which it in turn could collect from its own clients.⁵³ The net effect of an increase in the discount rate then is to reduce the margin of profit of the member bank.⁵⁴ Barring the most extraordinary rates the member bank can always afford to borrow as long as there is a demand for loans in the community. It is the latter factor rather than the discount rate which is likely to determine and control the rate of expansion or contraction of bank credit in a community. What is

⁵² *Idem.*

⁵³ This would be possible only under the most favorable circumstances but in a period of general expansion the possibility of manifold loans is theoretically better than in a period of stability.

⁵⁴ Assuming that the bank does not or cannot increase the interest charges to its own customers.

true of these individual cases in the Atlanta district is true of the district as a whole. While other sections of the country were deflating the Atlanta district registered an increase of 26% in the borrowings of member banks.⁵⁴

The point we wish to emphasize here is that the increase in the rates was at the expense of the member bank and did not result in an increase in the rates charged to customers. This was brought out fully in the testimony of Governor Miller of the Federal Reserve Bank of Kansas City where the application of the progressive rate was under fire. Since the inquiry was born of the particular distress of the farmer, it had been taken for granted that the progressive rate was one of the factors in the farmers unhappy state.

"We have on our application blanks for loans a column that says: What rate of interest did you charge on the notes you are presenting? Knowing that that question would be asked, here is a list of nearly every borrowing bank that we have had, showing the rate of interest it collected from its customers and the rate of discount we charged the borrowing member. It also shows the rate of interest the same banks charged their customers in 1918, 1919, 1920, and 1921; and they paid nearly the full contract rate in the several states—in fact, the record shows that the local banks charged no more when they were paying the progressive rate than they charged before or since, because they always charged all the traffic would bear."⁵⁵

The Federal Reserve Bank of Kansas City also sent questionnaires to member banks which were not borrowing at all in order to determine the rate such banks charged their clients and the replies showed "that they charged exactly the same rate as their neighbor who was borrowing at the progressive rates of interest from us. In other words they were charging all the traffic would bear whether they borrowed or not."

"Our records clearly show that not a single bank, city or country, charged its customers more than it would have charged if it had not borrowed at all."⁵⁶

It is significant that these statements were not printed in

⁵⁴ Agricultural Commission Report, Part II, p. 68.

⁵⁵ *Ibid.*, Vol. III, p. 751.

⁵⁶ *Ibid.*, p. 752.

the published records of the hearings. The worst that can be said of the progressive rates therefore is that they were not successful in limiting expansion, that their harmful effects were limited to the profits of member banks and the net result there was that those profits were not as great as they might have been if the progressive rates had not been applied.

This conclusion does not support the complaints that were presented to the Commission.

"In general, the complaints against the operation of the progressive rate may be stated as follows:

"1. That it resulted in the imposition of exorbitantly high rates of discount on member bank loans.

"2. That its application resulted in excessive pressure upon member banks borrowing from the Federal Reserve Bank to reduce their borrowings.

"3. That it resulted in excessive rates on the borrowings of some banks and consequent hardship."⁵⁷

As to complaint number one and also number three, we may take the average rates charged to member banks in the various districts:

<i>Federal Reserve Banks</i>	<i>1920</i>	<i>1921</i>
<i>Progressive rate districts</i>		
Atlanta	5.97	6.05
Kansas City	6.65	6.14
St. Louis	5.98	5.90
Dallas	5.78	6.01
<i>Flat rate districts</i>		
Boston	6.03	5.88
New York	5.97	6.06
Philadelphia	5.44	5.44
Cleveland	5.66	5.72
Richmond	5.78	5.91
Chicago	6.32	6.29
Minneapolis	6.40	6.35
San Francisco	5.82	5.79 ^m

These figures give no support to the first complaint.

^m Report of Commission, Part II, p. 56.

ⁿ Based upon data contained in *Interest Charges of Federal Reserve Banks*, op. cit., p. 11.

As to the third complaint, concerning the injurious incidence of these high rates upon certain banks, we have these facts. In the Dallas district the maximum average rate did not exceed 8% except in one instance where it reached 8½%.⁵⁹ In the Kansas City and Atlanta districts the average rate on all borrowings rarely approached ten per cent, even before a rebate was made on all charges in excess of 12% by these two reserve banks. The bank which paid 87½% on a fraction of its borrowings for a two-week period paid only 8.8% on its total borrowings after charges in excess of 12% had been refunded.⁶⁰

As to charge number two we have seen that such pressure was not evidenced in a reduction of loans.

However the clamor was too much. The progressive rate was discontinued in Atlanta Nov. 1, 1920; in Dallas Feb. 15, 1921; in St. Louis June 23, 1921 and in Kansas City on August 1, 1921.⁶¹

In the Hearings on S.4280 (H.R. 13033) known as the Agricultural Credits Act of 1923, Mr. Sydney Anderson who has served as Chairman of the Joint Commission of Agricultural Inquiry stated that the progressive rate amendment to the Federal Reserve Act "is unnecessary, and I think that it involves an unsound banking practice. I think the sound banking practice requires the exercise of a sound banking judgment in determining whether a loan shall be made or called, and when you substitute for that sound banking judgment an arbitrary rule which imposes the same pressure for liquidation upon all borrowing banks regardless of their condition or ability to pay, I think you depart from the sound judgment which ought to be exercised and sound principle which ought to be applied in banking practice."⁶²

This interpretation of the application of the progressive rate is diametrically opposed to that which we have devel-

⁵⁹ *Ibid.*, p. 5.

⁶⁰ *Ibid.*, p. 5.

⁶¹ *Ibid.*, pp. 11-12.

⁶² Hearings before the Committee on Banking and Currency, House of Representatives, 67th Congress, third and fourth sessions on the bills S. 4280 H.R. 13033, Part II, p. 180.

oped. It is the flat rate which treats all borrowers alike ⁶³ and it is the progressive rate which "tended to penalize the bank that was borrowing excessively in direct proportion to its excess borrowing, and, therefore, tended to reduce the borrowings of the bank that was borrowing excessively, thus making a larger amount of funds available to banks that were not borrowing at all, or borrowing only moderately." ⁶⁴

The obituary of the progressive rate was read in the "Agricultural Credits Act of 1923," approved March 4, 1923. "Sec. 407. That the Act entitled 'An act to amend the act approved December 23, 1913, known as the Federal Reserve Act,' approved April 13, 1920, is repealed." ⁶⁵

What comment shall we inscribe on the gravestone of this experiment? It has passed on, shunned by all. By its enemies it has been abused and proscribed. Its friends have raised no voice in its defense. They still suffer from the embarrassment which it caused them.

Unfortunately certain accidents have given it a character which it does not deserve. In the first place, it was applied in districts predominantly agricultural. In the second place, the Federal Reserve Board was unable to envisage the extreme and exceptional cases which provided such odious ammunition. How could any one anticipate a stupidity in management which would allow the reserve of a bank to drop to \$86.00? If this could have been foreseen, which is unreasonable, a limit to the graduated rate might have been set which could have been defended.

The experiment has value due to the light which it sheds on the efficacy of the discount rate as a weapon of credit control and on the dilemma in discount policy which is a source of uneasiness for the friends of the Federal Reserve System.

It is difficult to discover anything in this experience which supports the view that the discount rate plays a con-

⁶³ Hearings, Agricultural Inquiry, op. cit., Vol. II, p. 766. "It operates directly and evenly upon every borrower."

⁶⁴ This quotation is from a report submitted by Mr. Anderson on October 14, 1921, op. cit., p. 56.

⁶⁵ Hearings on S. 4280, op. cit., pp. 350-351.

trolling part or even a vital part in the fluctuations of credit and business. It by no means settles the issue but as a bit of relevant evidence it is entitled to more attention than it has so far received.

Finally to come back to the theme with which we started, the power to establish graduated rates was in effect a compromise between the principle of regulation by definite and uniform rule and the principle of elastic and particularized banking judgment. It was an effort to apply, automatically, that discrimination between the fit and the unfit which it is the purpose of intelligent judgment to discern and competent administration to achieve. While the latter is the better solution in many ways, it is extremely doubtful whether in a public institution in a democracy under present conditions such a principle is practicable.

APPENDIX A

DESCRIPTION OF PROGRESSIVE RATE PLANS IN EFFECT IN THE ATLANTA, ST. LOUIS, KANSAS CITY, AND DALLAS FEDERAL RESERVE DISTRICTS ⁶⁶

(Copied from pamphlet on Discount Rates of the Federal Reserve
Banks, 1914-1921)

Atlanta

Date effective: May 31, 1920.

Basic line: Sixty-five per cent of reserve balance plus paid-in subscription to capital stock of Federal reserve bank—average for previous reserve computation period, weekly for reserve city banks and semimonthly for country banks—multiplied by two and one-half.

When applied: Normal rate at time of discount. Superrate applied at end of reserve computation period to average borrowings in excess of basic line.

Scale of rates: Superrate of one-half per cent for first 25 per cent or fraction thereof by which borrowings exceed basic line, 1 per cent for second 25 per cent excess, etc.

Exceptions: Member bank collateral notes secured by Liberty bonds or Victory notes actually owned by the borrowing bank on April 1, 1920, or by Treasury certificates actually owned were subject only to normal discount rates, but were considered a part of the total borrowings or "credit structure" in determining the progressive rate applicable to other eligible paper.

Rebates on paper paid before maturity: At normal rate.

Modifications: On June 14, 1920, after approval by the Federal Reserve Board paper drawn for strictly agricultural production up to 100 per cent of the member bank's capital and surplus was excepted from application of progressive rates.

On June 23, 1921, Federal Reserve Board approved recommendation that all charges previously made in excess of 12 per cent, including the normal rate, be rebated.

Date discontinued: November 1, 1920.

⁶⁶ Interest Charges of Federal Reserve Banks, Senate Document No. 201, 67th Congress, 4th Session, pp. 11-12.

St. Louis

Date effective: May 26, 1920.

Basic line: Same as Atlanta, except that reserve balances required during reserve computation periods covered by borrowings were used in determining the basic line.

When applied: Same as Atlanta.

Scale of rates: Same as Atlanta.

Exceptions: Member bank collateral notes secured by Liberty bonds or Victory notes actually owned by the borrowing bank on April 1, 1920, or by Treasury certificates actually owned were not considered part of the total borrowings or "credit structure" nor did progressive rates apply thereto.

Rebates on paper paid before maturity: At normal rate.

Modifications: On May 21, 1921, progressive rate plan was modified to provide a rate of 1 per cent in excess of the normal rate of 6 per cent on all borrowings in excess of the basic discount line, subject to exemption previously in effect.

Date discontinued: June 23, 1921.

Kansas City

Date effective: April 19, 1920.

Basic line: Same as Atlanta, except that the reserve balance used in determining the basic line was the average maintained during the reserve computation periods ending within the preceding month.

When applied: At time of discount, subject to adjustments to compensate reductions in borrowings and increased or decreased basic line determined from month to month by the formula outlined above.

Scale of rates: Same as Atlanta.

Exceptions: Member banks' collateral notes, secured by Treasury certificates of indebtedness, Liberty bonds, or Victory notes owned by the borrowing member bank on April 1, 1920, were exempted from the application of superrates but were considered part of the "credit structure" or total borrowings in fixing the rates applicable to other paper; while all rediscounts secured by Government war obligations, as well as member banks' collateral notes not described above, were subject to the application of the superrates as well as being considered part of the "credit structure."

Rebates on paper paid before maturity: At rate charged.

Modifications: On April 27, 1920, modified the progressive rate plan by excluding member banks' collateral notes secured by

Liberty bonds or Victory notes actually owned on April 1, 1920, or by Treasury certificates of indebtedness actually owned altogether from the application of progressive rates; i.e., they were not only not subject to progressive discount rates, but were not to be taken into consideration in determining the progressive rates applicable to other eligible paper; while rediscounts secured by Government war obligations, though no longer subject to the application of superrates, were still considered part of the "credit structure" or aggregate indebtedness in determining superrates applicable to other eligible paper.

On January 29, 1921, established a maximum rate, including the normal rate, of 12 per cent.

On July 1, 1921, established a maximum rate of 8 per cent, including the normal rate of 6 per cent, and at the same time changed the scale of progression to 1 per cent for the first 100 per cent of borrowings in excess of the basic line and to 2 per cent on any further borrowings. Beginning July 1 member bank collateral notes secured by Government war obligations, while subject only to normal discount rates, were again considered a part of the "credit structure" for the purpose of determining the progressive rate applicable to other eligible paper.

On August 3, 1921, Federal Reserve Board approved recommendation that all charges previously made in excess of 12 per cent including the normal rate be rebated.

Date discontinued: August 1, 1921.

Dallas

Date effective: May 21, 1920.

Basic line: Paid up and unimpaired capital and surplus of borrowing bank.

When applied: At time of discount. (See modifications.)

Scale of rates: Same as Atlanta.

Exceptions: Same as St. Louis.

Rebates on paper paid before maturity: At current discount rates.

Modifications: On July 7, 1920, discontinued application of progressive rates to current offerings, and thereafter based them upon average excess borrowings within a reserve computation period. At this time all charges previously made were rebated and in lieu thereof new charges were imposed in accordance with the modified scheme.

Date discontinued: February 15, 1921.

CHAPTER XXV

CENTRAL BANK RATES AND PRICE CONTROL IN ENGLAND, FRANCE AND GERMANY

Federal Reserve Banks and Bank of England—A Comparison—Position—Age—Political Persecution—Accountability—Government Deposits—Banking Reserves—Centralization of Banking Structure—The Banking Community—Liaison—All Advantages with Bank of England—Correlation Between Banking Policy and Price Level—Lesson of Statistics—French and German Statistics.

WHILE a part of the exuberant confidence in the power of the discount rate to regulate prices in this country rests upon an incomplete examination of our war and post-war experience, a substantial part is also due to the alleged omnipotence of the rate of the Bank of England and an implied similarity between that institution and the Federal Reserve Banks. Before considering, statistically, the actual influence of the bank rate in England, in so far as our factual material will permit, it is necessary to question the resemblance between the two institutions.

Undoubtedly both are central banks; both are charged with the conservation of the credit and monetary resources of their respective countries; both have certain intimate relations with the Fisc and both are, in a sense, bankers' banks with limited contacts with the public. Beyond this our identity becomes more and more tenuous and we may well ask if the few attributes in common, to which we have pointed, important though they be, are sufficient to justify the expectation that what is feasible for the Bank of England is possible and practicable for the Federal Reserve Banks. To determine this it will be necessary to consider the points of dissimilarity. If these be cardinal they may well impair the validity of our anticipation of comparable Federal Reserve puissance.

First of all, we must point to the discrepancy in the ages of the two institutions. The Bank of England was estab-

lished in 1694. To discuss the auspices under which it was born or to render a detailed account of its subsequent history would be irrelevant. It is proper, however, to indicate that of the great central banks, such as those of Genoa, Venice and Amsterdam which scintillated in the commercial and banking firmament when this modest youngster arrived, none have survived. The Bank of England, blinking its eyes as the bastard offspring of governmental impecuniosity,¹ ushered surreptitiously through a captious parliament under the guise of the Tonnage Act, commenced its existence under circumstances and portents that could scarcely have been more inauspicious. Its history is an epic tale which fidelity to our subject precludes repeating. Of the bright galaxy of banks whose illustrious circle the Bank of England apologetically joined, all have demonstrated mortal frailty. One and all they have displayed a susceptibility to hazard, a lack of immunity to monetary diseases which have proved fatal. Perturbed at times and shaken by savage conflict it has, nevertheless, withstood all assaults and emerged from each crisis stronger and more firmly entrenched in wisdom and power. It appears destined to go on forever. In the English mind this great institution seems invested with qualities of immutable eternity. What a contrast this magnificent tradition offers to the story of the first and second United States banks! While the Federal Reserve Banks are still sustaining their baptismal fire, the Bank of England rests serenely upon an exalted eminence. Canonized by Englishmen, majestically radiant in the glory of past achievements, fortified by the accumulated wisdom of centuries of experience, revered in every corner of the globe, where trader meets trader, the Bank of England is in a class by itself.

While it has weathered many an arduous campaign in which it was compelled to struggle against destruction or emasculation by political guerillas, it has finally won practical emancipation from disturbing assaults. This, unfortunately, cannot be said of the Federal Reserve Banks. They

¹ Andreades, *History of the Bank of England*, pp. 58-59.

are still in that stage of immaturity where Congress counts that day lost whose low setting sun fails to witness at least one proposal to investigate or to modify the Federal Reserve system. The officials of the latter are harrassed by repeated demands to testify before governmental committees and to justify conduct and policies whose delicacy is often not appreciated or receives at best but scant protection. The monthly and annual reports of the Federal Reserve Board, the bulletins and publications of the individual reserve banks, not to mention the annual reports of the Comptroller, give us a body of monetary and banking statistics which no other country in the world enjoys. In spite of this the system has been subjected to constant snipeshooting which will tend not only to keep competent men out of it but will also serve to undermine the confidence which the nation has in its banks. Confidence is to a bank the sustaining stream of life. Psychically it is a blood brother of faith and as such it should be nourished by every means at the disposal of the legislative body. As long as the Federal Reserve Banks are subject to the attrition of continuous investigation, they will be unable to develop an "effective procedure" or to apply freely that fine banking judgment which is essential to the proper discharge of the functions of a central bank. We may contrast the foregoing with the liability of the Bank of England to persecution by disgruntled groups and with its policy of giving to the public the minimum of information concerning its conduct. The statements of the Bank of England have long been the despair of students. As an institution its expressions are conspicuous only because of their inadequacy. In the problem of the regulation of credit and the administration of the discount rate, this is a distinct advantage. The very freedom from a strict accountability for every act and change of policy invests the latter with a minatory significance to the business world which is absent from the conduct of the Federal Reserve Banks in this country. The business community on this side of the water knows that there are definite limitations in the matter of conduct and policy.

which for political reasons the Federal Reserve Banks dare not transgress. The experience with progressive discount rates demonstrates that even in the exercise of a clear statutory authority the system is vulnerable to the assaults of disappointed groups. While these facts are all imponderables, they establish a vital difference between the English and American banking systems and any proposal which seeks to apply to one a remedy which was effective in the other must make allowances for this difference.

Another factor which gives the Bank of England a preferred position in the control of the money market is its exclusive right to hold the deposits of the government. These constitute a substantial part of its total deposits as may be seen from the following figures:

	<i>Public Deposits</i>	<i>Other Deposits</i>	
Dec., 1927	14.6	124.0	Expressed in millions of pounds sterling. Federal Reserve Bulletin, April, 1928, p. 274.
Jan., 1928	16.5	98.7	
Feb., 1928	10.1	98.5	
Average	13.73	107.1	
Per cent of total...	11.4%	88.6%	

We may compare this with the similar relationship of government and other deposits of the Federal Reserve Banks.

	<i>Government Deposits</i>	<i>Other Deposits</i>	
Dec., 1927	9	2,436	Expressed in millions of dollars; figures based upon weekly averages in Federal Reserve Bulletins.
Jan., 1928	17	2,465	
Feb., 1928	26	2,406	
Average per cent of total .....	.7%	99.3%

It may be seen that only a small fraction of the total deposits of Federal Reserve Banks are government deposits. In the Bank of England public deposits are, relatively, sixteen times as important as in the Federal Reserve Banks.

On June 30, 1927 the American government had \$257,-091,107.83 on deposit in the banks of the country and of this total \$30,656,042.52² was in Federal Reserve Banks. Whereas the British government keeps all its deposits in

² Annual Report of the Secretary of the Treasury, June 30, 1927, p. 146.

the Bank of England, the American government maintains approximately 12 per cent of its funds in the central bank of the country. If we take a yearly average we get approximately the same percentage. During the two fiscal years, 1926 and 1927, the government kept on deposit in the banks of this country other than the federal reserve banks varying amounts which averaged approximately 229 millions of dollars, about eight times the average maintained in the Federal Reserve Banks. These deposits were also roughly equivalent to ten per cent of the reserve which member banks kept on deposit in the Federal Reserve Banks. To the extent that these deposits emancipated the member banks from a dependence upon the Federal Reserve Banks they weakened the ability of the latter to control the credit supply of the country. They had precisely the same effect as the ownership of an equivalent amount of gold by the beneficiary banks.⁸ We may say that the exclusive right to

⁸ The system of government depositaries was recognized as an evil at the time of the Federal Reserve Act was passed and it was then hoped that among the valuable effects of the Act would be the elimination of thousands of depositary banks, dependent upon the Treasury, and the concentration of the public funds in the relatively small number of federal reserve banks. This would have released the Secretary of the Treasury from his maternal function of nursing weak banks with government deposits and would have simplified the accounting of government funds. Unfortunately, this hope was short-lived. The war served as a pretext for the re-establishment of this vicious system on the ground that widely scattered government deposits would facilitate the sale of government securities. Instead of having accounts in a small number of conveniently located banks the deposits of Uncle Sam are spread out in more than seven thousand institutions. This means that approximately one bank in every four is a government depositary and one does not require an active imagination to realize the difficulty of maintaining accounts in so many banks. The Act of September 24, 1917, calls for the designation of special depositaries to accept deposits arising from the sale of bonds, notes or Treasury certificates of indebtedness. Although intended to facilitate war financing, we find that 7,224 banks held designation as special depositaries at the end of the fiscal year, 1927. In addition to the special depositaries, there were 321 general depositaries at the end of the same year which carried balances to the credit of the Treasurer, the amount so carried being adjusted periodically on the basis of the government business transacted by such banks. With the exception of the federal reserve banks all depositaries are required to pay two per cent interest on government deposits. From April 24, 1917, to June 30, 1928, this interest has yielded the government \$73,646,000.69. Considering the element of weakness in our banking system which it has introduced, it is doubtful whether the practice of diffusing government deposits can be justified on the basis of this return..

keep government deposits is a line of power controlled by the Bank of England and denied to the Federal Reserve Banks.

We come next to a significant distinction in the positions of the two institutions as the guardians of the banking reserves of their respective countries. The Bank of England is the sole source of cash and the exclusive repository of the reserves of English banks. We need experience no great concern over the fact that the Federal Reserve Banks do not possess a monopoly of the note issue. The possibility of note issue inherent in the rights of national banks is so slight as to be negligible. On the other hand, the fact that two-thirds of the banks of the country are not members of the Federal Reserve System and have, therefore, no direct contact with the latter is much more serious. This danger to effective control is mitigated by the importance of the banks which do belong to the system. They control about two-thirds of the banking resources of the country and give the central bank greater control of the credit mart than would be the case if resources and membership were divided in the same ratio. Nevertheless, it is a matter of grave concern that almost twenty thousand banks should still stand aloof. Tenuous as is the influence of the Federal Reserve Banks over the credit policies of member banks, with the great body of institutions beyond the pale of central control it is but a shadow.

Although the improvement in centralization of banking resources and especially reserves under the operation of the Federal Reserve Act has been great, our monetary cohorts are still deployed on a far-flung banking front. Compared to the systems of the commercial nations of Europe, we are still the extreme example of decentralization in banking. Elaborate comparisons will not profit us greatly and,

The Treasurer usually fixes the minimum to be maintained at each depository and in the event that this is impaired a telegraphic transfer is immediately effected from the nearest federal reserve bank or branch on behalf of such depository. These restorations reach large amounts, \$126,139,206 for 1925 and \$122,519,401 for 1926. (See Annual Report of the Treasurer, 1926, p. 604). This practically amounts to a guaranteed deposit which can immediately be converted into reserves.

since we are here engaged in calling attention to the fallacy of the recurrent comparisons of the discount rate in England and the United States, our purpose will be served by a consideration of the banking system of England alone. This has been termed "the most highly concentrated banking system in the world."⁴

The amalgamation movement is a familiar phenomenon of English banking history. During the last century, more than 550 amalgamations have taken place so that the annual toll of banks has exceeded five.⁵ At the present time it is safe to say that the banking system of England consists of the Bank of England and the "Big Five," six institutions in all. Of a total of 10,717 offices in Great Britain, 7,621 belong to the "Big Five."⁶ The combined assets of these five banks constitute more than 85 per cent of the resources of all the joint-stock banks of England. In fact these five banks control from 40-50 per cent of all the banking resources of the British Empire.⁷ The following table gives a statistical portrait of this concentration.

<i>Banks</i>	<i>Total Assets*</i>	<i>Branches*</i>
Joint-stock banks of England and Wales—		
Barclay's	£ 350,757,000	1,900
London Joint City & Midland.....	407,671,000	1,950
Lloyd's	373,979,000	1,700
National Provincial & Union.....	291,497,000	1,116
Westminster	328,044,000	955
Total	£1,751,947,000	7,621
All other Joint-stock banks of England and Wales		
	318,916,000	3,096
Total	£2,070,863,000	10,717
Bank of England.....	267,473,000	10

* Commerce Reports, Trade Information Bulletin, No. 99, May 21, 1923, U. S. Department of Commerce, p. 33.

⁵ Sykes, Joseph, *The Amalgamation Movement in English Banking*, P. S. King & Son, London, 1926, p. 97.

⁶ Europa Year Book, 1928, pp. 390-391.

⁷ Trade Information Bulletin, No. 99, op. cit., p. 36.

⁸ *Ibid.*, pp. 40-41.

⁹ Europa Year Book, 1928, pp. 390-391.

Thus the Bank of England has a very closely knit credit structure to which it can transmit its leadership. It deals with but five powerful banking groups and the intangible controls with which a central bank makes its wishes effective are a reality compared to the impotent gestures of a bank which must attempt to guide 30,000 heterogeneous and often discordant units.

Where the ratio between the assets of the central bank and the other banks is as 1 is to 8 in England, in America it is as 1 is to 12. While it cannot be said of either country that the central bank is in a position to dominate through sheer strength the Bank of England more nearly approaches this state than do the Federal Reserve Banks.

The small size of England, its uniform development, the absence of raw young communities with a hinterland inferiority complex, which in our country has always populated Wall Street with unprincipled financial brigands, the density of population, the high state of industrialization, the homogeneous character of the population, all combine to make the task of credit control far simpler for the Bank of England than it is at present for the Federal Reserve Banks.

We have so far examined only the superficial integration of banking in England. While the corporate bonds show a unity and cohesion which is extraordinary, there is over and above these legal ties a community of interest between the Bank of England and the financial and industrial leadership of the empire which adds greatly to the power of this bank. The connections of some of the directors of the Bank of England are illuminating. We may start with Sir Charles Stewart Addis, one of the British representatives on the Dawes Commission, a member of the General Council of the Reichsbank, President of the Institute of Bankers, 1921-1923, member of the Cunliffe Currency Commission, Chairman of the Hongkong and Shanghai Bank and a director of half a dozen great corporations. There is Sir Alan Garret Anderson who holds important executive and advisory positions in no less than five pow-

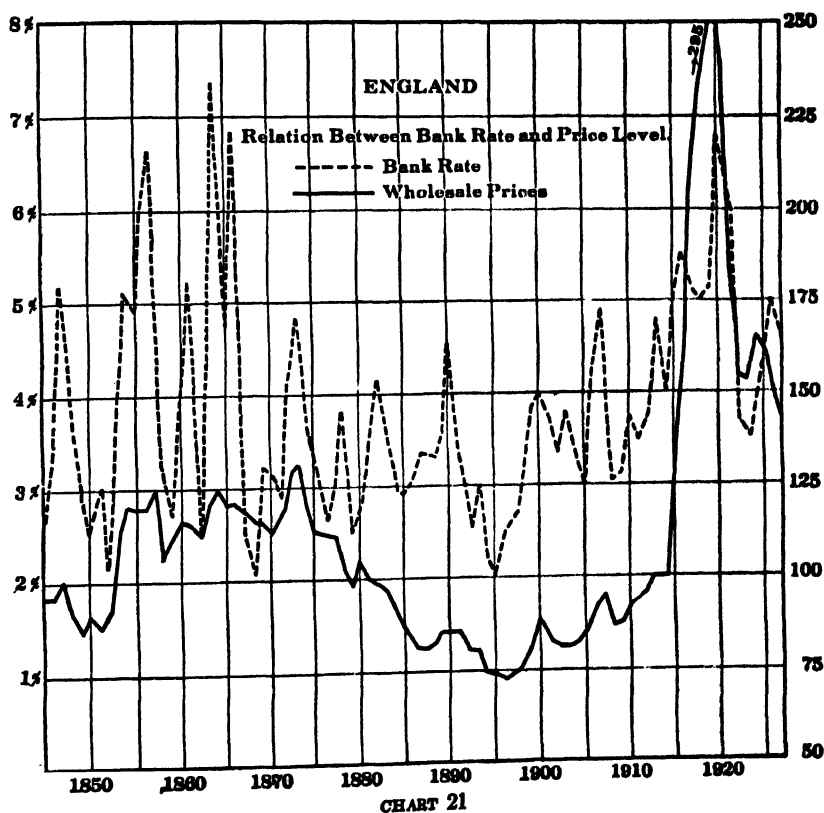
erful commercial organizations. Kenneth Goschen is a Director of the Bank of Australasia and a partner in the private banking firm of Goscens & Cunliffe. Edward Charles Grenfell is a partner in the firm of Morgan, Grenfell & Company and a Director of the White Star Line. Sir Robert Kindersley is chairman of Lazard Bros. & Company, and of the Whitehall Trust, Governor of Hudson's Bay Company, 1916-1925, Senior British Representative on the Dawes Commission. We need mention but one more, John Baring, Lord Revelstoke, partner in Baring Brothers & Company, Ltd., member of the Council of the Prince of Wales, Lord-Lieutenant of the County of Middlesex, etc. The illustrious peers of Great Britain's world wide mercantile and financial empire sit upon the Board of Directors of the Bank of England.

It is idle, therefore, to attempt to draw a comparison between the credit situation in England in the United States and to expect that a central bank policy enforced through open market operations and the discount rate would be as effective in the United States as it is supposed to be in England. The incomparable advantages of the Bank of England in the prestige of crystallized tradition, freedom from political snipeshooting, relief from the burden of defense, the support of government deposits, the exclusive possession of bank reserves, the concentration of banking power, the size of the country, the density of population and its state of economic progress, and finally the identity of interest of the great bank and the commercial and financial community which it serves, afford the most favorable auspices under which a central bank might embark on a policy of credit and price control.

Let us see, therefore, if the relation between the rates of the Bank of England and changes in the price level provide the assurance of the success of this weapon of control which some students allege and which the experience of our country has so far failed to yield.

In determining the correlation between these two factors we shall consider a rise in the bank rate accompanied

by a rise in the price level and a fall in the bank rate accompanied by a fall in the price level as positive correspondence while a movement in opposite directions will be considered as negative and the failure of one factor or the other



to move will be held neutral. The table on page 422 shows that these two factors move together 51 times, in opposite directions 23 times. On 8 occasions we find no change in the price level from one year to the next. It must be said that as evidence this is only a straw in the wind but in so far as any credence whatsoever can be placed upon it, little support is yielded to the discount theorist.

LONG-TIME RELATION BETWEEN BANK RATE AND THE PRICE LEVEL
IN ENGLAND

Year	Bank Rate ¹	Wholesale Price Level ²	Year	Bank Rate	Wholesale Price Le
1845	2.679	95	1897	2.636	73
1846	3.327	95	1898	3.245	75
1847	5.171	100	1899	3.753	80
1848	3.721	91	1900	3.964	—
1849	2.947	86	1901	3.722	82
1850	2.507	91	1902	3.329	81
1851	3.000	88	1903	3.751	81
1852	2.156	92	1904	3.297	82
1853	3.694	112	1905	3.008	85
1854	5.115	120	1906	4.269	91
1855	4.888	119	1907	4.925	94
1856	6.066	119	1908	3.012	86
1857	6.667	124	1909	3.100	87
1858	3.229	107	1910	3.723	92
1859	2.740	111	1911	3.470	94
1860	4.180	116	1912	3.774	100
1861	5.248	115	1913	4.770	100
1862	2.530	119	1914	4.044	100
1863	4.411	121	1915	5.000	127
1864	7.352	124	1916	5.467	160
1865	4.770	119	1917	5.155	206
1866	6.949	120	1918	5.000	226
1867	2.540	118	1919	5.151	242
1868	2.096	116	1920	6.710	295
1869	3.201	115	1921	6.097	182
1870	3.100	113	1922	3.699	154
1871	2.882	118	1923	3.490	152
1872	4.094	128	1924	4.000	165
1873	4.797	131	1925	4.575	159 ³
1874	3.692	120	1926	5.000	148
1875	3.233	113	1927	4.652	141
1876	2.607	112			
1877	2.900	111			
1878	3.781	102			
1879	2.512	98			
1880	2.761	104			
1881	3.481	100			
1882	4.145	99			
1883	3.578	96			
1884	2.956	89			
1885	2.919	85			
1886	3.053	81			
1887	3.345	80			
1888	3.303	82			
1889	3.555	85			
1890	4.523	85			
1891	3.322	85			
1892	2.522	80			
1893	3.058	80			
1894	2.116	74			
1895	2.000	73			
1896	2.478	72			

¹ Bankers Magazine, London, Feb., 1923, p. 228.

² *European Currency and Finance*, Commission of Gold and Silver Inquiry, U. S. Senate, Vol. I, p. 450.

³ Derived from monthly figures in Bulletin of Statistics, League of Nations.

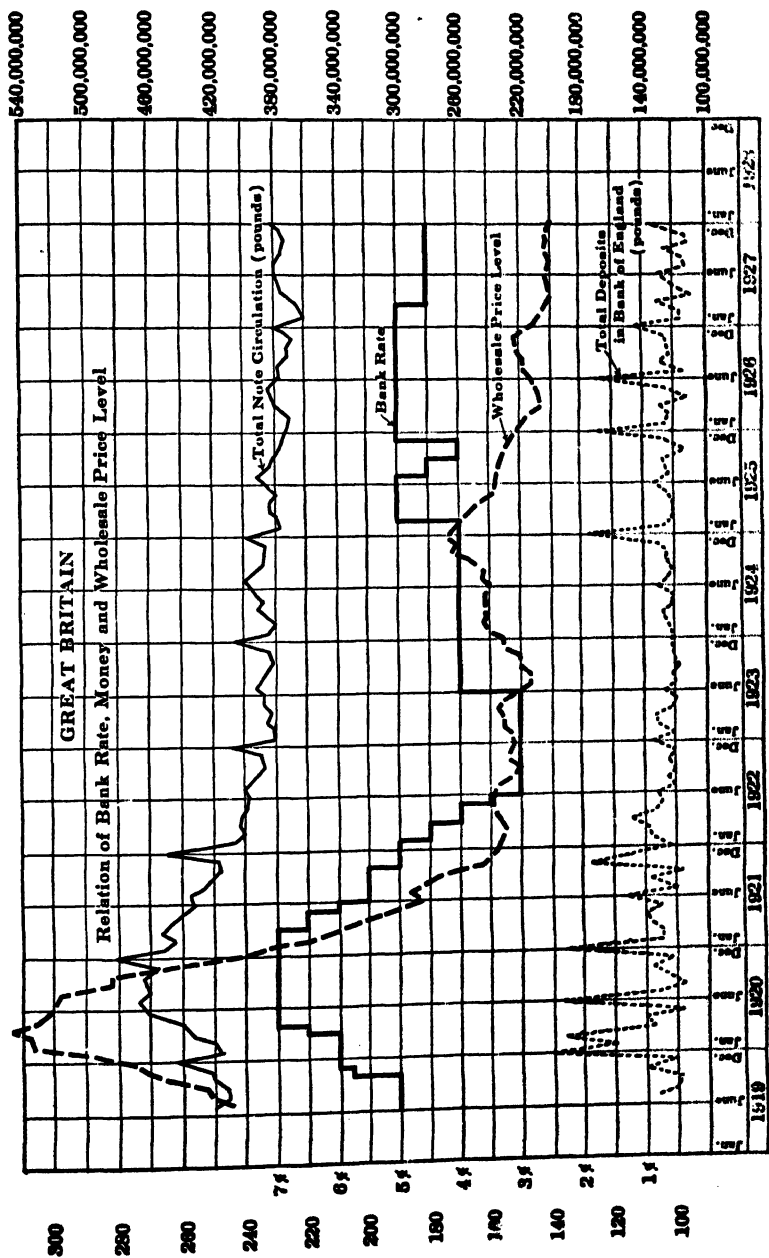


CHART 22

BANK RATE, MONETARY SUPPLY AND PRICE LEVEL IN GREAT BRITAIN

	<i>Bank Rate</i>	<i>Total Deposits Bank of England ^a</i>	<i>Total Note Circulation ^a</i>	<i>Wholesale Price Level</i>
1919				
J.	5	134.4	418.2	243
A.	5	118.2	410.8	250
S.	5	116.8	412.8	252
O.	5	138.9	419.3	264
N.	5½	120.3	422.7	271
D.	6	200.0	443.5	276
1920				
J.	6	155.3	413.8	288
F.	6	190.1	417.4	306
M.	6	137.2	434.7	307
A.	6½	140.4	438.7	313
M.	7	117.8	451.9	305
J.	7	191.7	464.0	300
J.	7	133.8	468.8	299
A.	7	116.0	462.3	298
S.	7	127.2	462.6	282
O.	7	137.0	464.7	282
N.	7	123.3	458.5	263
D.	7	189.9	481.0	243
1921				
J.	7	128.6	451.5	232
F.	7	127.2	444.3	215
M.	7	137.7	454.3	208
A.	6½	141.3	447.1	199
M.	6½	128.5	441.5	191
J.	6	147.0	433.4	183
J.	5½	121.8	434.0	186
A.	5½	136.8	426.7	181
S.	5½	117.7	420.0	175
O.	5½	175.0	416.0	163
N.	5	144.2	418.3	161
D.	5	122.6	452.7	157
1922				
J.	5	135.5	407.8	156
F.	4½	137.8	400.4	155
M.	4½	150.6	403.6	157
A.	4	134.4	402.1	158
M.	4	130.2	400.2	159
J.	3½	131.4	398.8	159
J.	3	121.9	400.1	157
A.	3	124.3	396.1	152
S.	3	120.7	390.4	150
O.	3	125.4	388.0	153
N.	3	121.5	389.6	153
D.	3	133.2	405.1	152

^a In millions of pounds sterling.

BANK RATE, MONETARY SUPPLY AND PRICE LEVEL IN GREAT BRITAIN—
Continued

	<i>Bank Rate</i>	<i>Total Deposits Bank of England</i>	<i>Total Note Circulation</i>	<i>Wholesale Price Level</i>
1923				
J.	3	121.0	381.1	153
F.	3	131.5	380.6	155
M.	3	132.7	387.6	156
A.	3	122.6	384.3	157
M.	3	119.2	389.6	155
J.	3	128.0	389.2	150
J.	4	119.8	392.3	147
A.	4	120.1	387.2	147
S.	4	118.1	384.3	150
O.	4	119.3	382.5	150
N.	4	120.9	384.1	156
D.	4	132.5	404.8	156
1924				
J.	4	121.5	384.0	161
F.	4	123.5	380.6	163
M.	4	127.5	384.5	161
A.	4	121.6	393.3	161
M.	4	120.0	389.4	161
J.	4	132.3	394.4	160
J.	4	124.2	400.2	163
A.	4	122.4	391.6	162
S.	4	124.3	387.1	166
O.	4	125.0	386.2	172
N.	4	131.0	386.0	171
D.	4	174.3	398.0	174
1925				
J.	4	130.0	378.7	171
F.	4	122.0	379.1	169
M.	5	121.0	383.0	166
A.	5	122.0	384.2	163
M.	5	123.0	380.4	159
J.	5	132.0	386.2	158
J.	5	124.0	391.3	158
A.	4½	126.0	384.5	157
S.	4½	129.0	381.5	156
O.	4	114.0	378.3	155
N.	4	125.0	376.4	153
D.	5	169.0	375.3	152
1926				
J.	5	124.0	373.0	150
F.	5	122.3	372.5	148
M.	5	129.0	381.8	144
A.	5	114.6	382.3	144
M.	5	123.0	384.9	145

BANK RATE, MONETARY SUPPLY AND PRICE LEVEL IN GREAT BRITAIN—
Continued

	<i>Bank Rate</i>	<i>Total Deposits Bank of England</i>	<i>Total Note Circulation</i>	<i>Wholesale Price Level</i>
<i>1926—Continued</i>				
J.	5	165.0	379.5	146
J.	5	115.2	379.7	149
A.	5	128.0	376.1	149
S.	5	122.0	372.2	151
O.	5	123.0	372.7	152
N.	5	125.0	369.2	152
D.	5	143.0	381.0	146
<i>1927</i>				
J.	5	116.5	364.5	144
F.	5	116.2	365.3	143
M.	5	130.3	369.8	141
A.	4½	108.8	376.1	140
M.	4½	118.2	378.1	141
J.	4½	126.9	380.0	142
J.	4½	113.4	380.2	141
A.	4½	115.3	377.1	141
S.	4½	123.2	375.1	142
O.	4½	111.8	374.5	141
N.	4½	113.6	376.5	141
D.	4½	138.6	382.3	140

The bank rate theory of price control as advanced by Cassel and Wicksell would call for an inverse relation, i.e., an advance in the discount rate, by increasing the cost of borrowing, should discourage it, and by diminishing the quantity of funds should reduce prices, while a drop in the rates should have just the opposite effect and should tend to raise prices. The bit of evidence here submitted shows that 51 changes in a total of 82 indicate similar discount rate and general price movements, while in only 23 cases is the orthodox theory supported.

The writer would here urge a caution lest his statements at this point be misinterpreted. It is not his intention to establish that the discount rate as manipulated by the Bank of England has been entirely without effect during the period of 83 years under consideration. During this time London has been the centre of the world's market for liquid capital. As such it has borne the responsibility of

so guiding the movements of funds as to minimize friction and disturbance. The discount rate in London may well be treated as a market price which reflects the supply and demand of the particular type of capital which seeks it as the appropriate market. Its great fluidity offers less resistance to pressure than any other kind of capital. One may, therefore, properly speak of the "delicate touch" on the lever of control. But the movement of gold into and out of England in response to worldwide forces, and the stimulating or deterring influence of the bank rate, cannot be identified with corresponding changes in the price level in England. While the reserves of the Bank of England, the movement of liquid capital and the bank rate may well show reciprocal relationship, it does not follow that the price level will manifest a compensating reaction to every movement of gold and to every alteration in the reserves of the Bank of England. The price level is a refractory reflection of community valuations in terms of money and does not yield readily to changes in reserves or the total of bank credit. It would require an extremely "academic" interpretation of the quantity theory to establish a deductive expectation of changes in the price level to conform to slight and ephemeral alterations in the supply of gold in England.

The rate of the Bank of England applies in a distinctly restricted field. It sometimes governs the cost of borrowing for short periods in the money market. We have already called attention to the difference of opinion among English thinkers concerning the degree of effectiveness of the bank rate in this limited area.¹⁰ Only those unfamiliar with the operation of the English money market have implied that the bank rate determined the rate on funds borrowed for capital purposes.

Yet, if the cost theory of the discount rate has any validity, it must be shown that the bank rate has an effect on the community rate of time preference. In other words, it must affect all forms of credit for permanent as well as

¹⁰ See page 347.

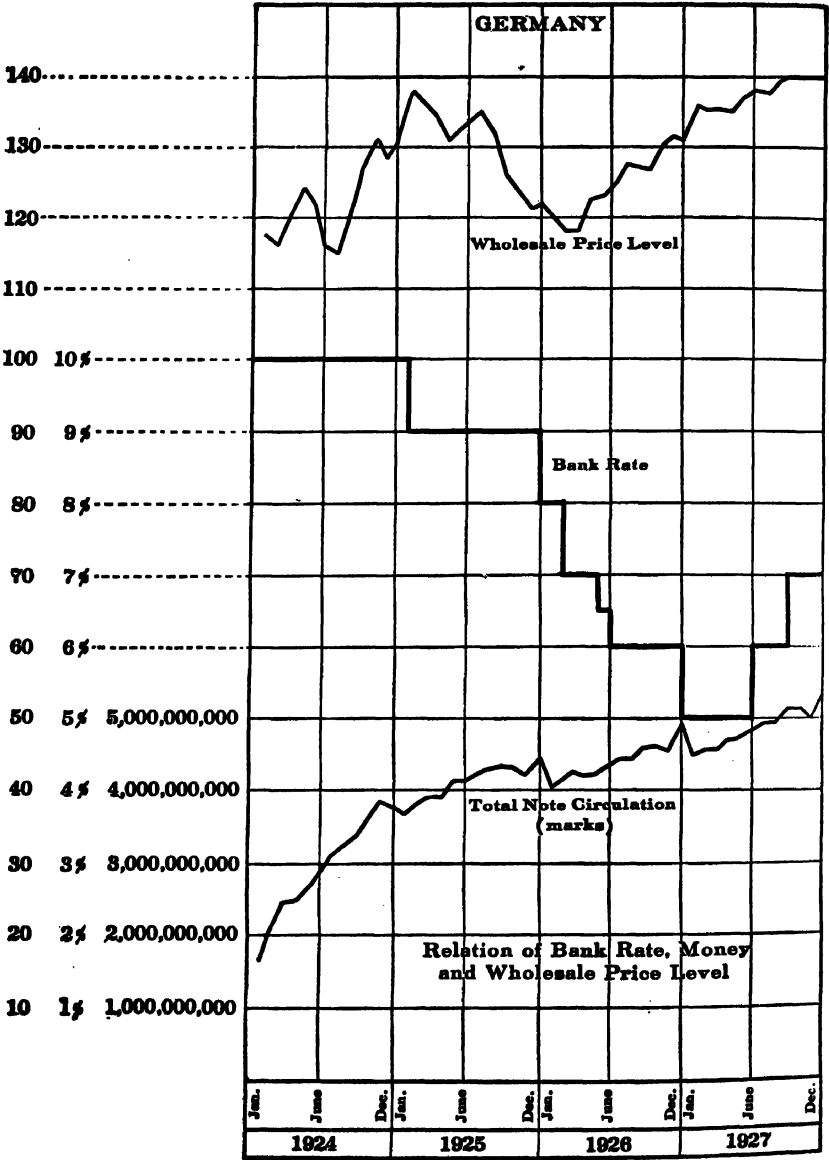


CHART 23

temporary capital purposes. This is a proposition which no one has undertaken to demonstrate. The bank rate may have some influence on the ease with which stocks can be purchased, but even here it is considered a minor influence.¹¹

We shall not attempt to review the discount rate relationship to price levels in France and Germany. The evidence in table and graph follows and the student will find that it offers as little support for the proposition that the discount rate is an instrument wherewith the central bank controls prices in these two countries as it has in England. In all three countries conditions are infinitely more favorable to such a demonstration than in the United States.

Germany¹²

			Wholesale				Wholesale
			Price				Price
			Level				Level
1924				1926			
Bank	Circu-			Bank	Circu-		
Rate	lation ¹³			Rate	lation		
J. 10	1,679	117.3	J. 8	4,099	120		
F. 10	2,151	116.2	F. 8	4,157	118.4		
M. 10	2,449	120.7	M. 7	4,281	118.3		
A. 10	2,486	124.1	A. 7	4,243	122.7		
M. 10	2,656	122.5	M. 7	4,251	123.2		
J. 10	2,869	115.9	J. 6½	4,359	124.6		
J. 10	3,014	115	J. 6	4,470	127.4		
A. 10	3,224	120.4	A. 6	4,485	127		
S. 10	3,373	126.9	S. 6	4,620	126.8		
O. 10	3,634	131.2	O. 6	4,644	130.2		
N. 10	3,843	128.5	N. 6	4,573	131.6		
D. 10	3,776	131	D. 6	4,900	130.9		
1925				1927			
J. 10	3,681	138.2	J. 5	4,518	135.9 ¹⁴		
F. 9	3,842	136.5	F. 5	4,579	135.6		
M. 9	3,926	134.4	M. 5	4,585	135		
A. 9	3,932	131	A. 5	4,736	134.8		
M. 9	4,160	131.9	M. 5	4,752	137.1		
J. 9	4,146	133.8	J. 6	4,832	137.9		
J. 9	4,231	134.8	J. 6	4,936	137.6		
A. 9	4,308	131.7	A. 6	4,942	137.9		
S. 9	4,362	125.9	S. 6	5,171	139.7		
O. 9	4,346	123.7	O. 7	5,127	140		
N. 9	4,251	121.1	N. 7	4,979 ¹⁵	140		
D. 9	4,436	121.5	D. 7	5,304	140		

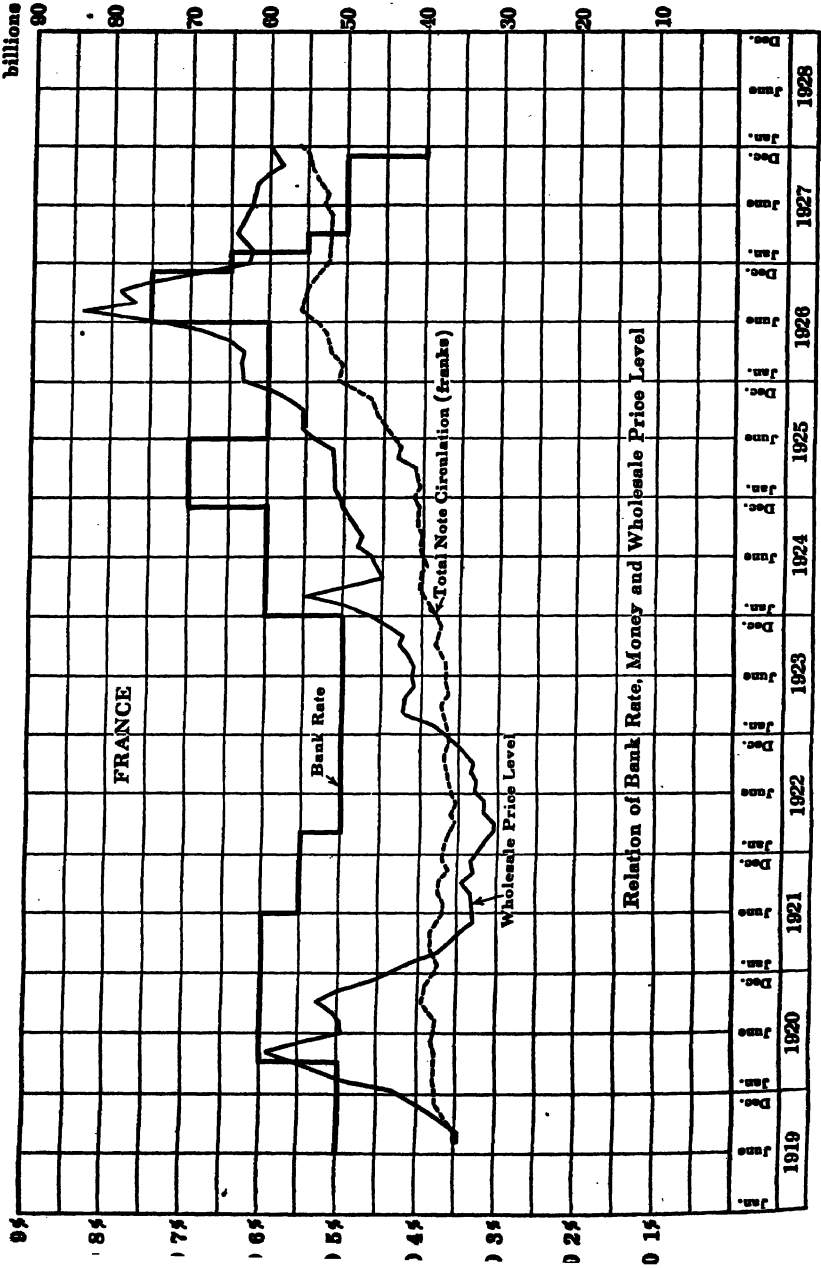
¹¹ Lavington, F., *The English Capital Market*, London, 1921, p. 231.

¹² Based on data in Bulletin of Statistics, League of Nations.

¹³ 000,000 omitted.

¹⁴ New Index.

¹⁵ Figures from this point taken from Federal Reserve Bulletin.



France*

	Bank Rate	Circu- lation	Wholesale Price Level		Bank Rate	Circu- lation	Wholesale Price Level
1919				1924			
J.	5	35.02	349	J.	6	38.8	494
A.	5	35.09	347	F.	6	39.3	543
S.	5	35.78	360	M.	6	40.2	499
O.	5	36.97	382	A.	6	40.0	450
N.	5	37.42	405	M.	6	39.5	459
D.	5	37.27	423	J.	6	40.1	465
1920				J.	6	40.3	481
J.	5	37.58	487	A.	6	40.0	477
F.	5	37.88	522	S.	6	40.5	486
M.	5	37.56	555	O.	6	40.5	497
A.	6	37.68	588	N.	6	40.4	503
M.	6	37.91	550	D.	7	40.9	507
J.	6	37.54	493	1925			
J.	6	37.69	496	J.	7	40.5	514
A.	6	37.90	501	F.	7	40.7	515
S.	6	39.20	526	M.	7	40.9	514
O.	6	39.08	502	A.	7	43.1	513
N.	6	38.80	461	M.	7	42.7	520
D.	6	37.90	435	J.	7	43.8	543
1921				J.	6	44.5	557
J.	6	37.91	407	A.	6	45.4	557
F.	6	37.80	377	S.	6	46.3	556
M.	6	38.43	360	O.	6	46.7	572
A.	6	38.21	347	N.	6	49.2	605
M.	6	38.23	329	D.	6	51.1	632
J.	6	37.42	325	1926			
J.	5½	36.94	330	J.	6	50.6	634
A.	5½	36.78	331	F.	6	50.9	636
S.	5½	37.12	344	M.	6	52.1	632
O.	5½	37.15	331	A.	6	52.2	650
N.	5½	36.33	332	M.	6	52.7	688
D.	5½	36.48	326	J.	6	53.9	738
1922				J.	7½	56.0	836
J.	5½	36.43	314	A.	7½	55.3	770
F.	5½	36.15	306	S.	7½	55.0	787
M.	5	35.52	307	O.	7½	54.5	751
A.	5	35.78	314	N.	7½	53.3	684
M.	5	35.67	317	D.	6½	52.9	627
J.	5	36.03	325	1927			
J.	5	36.04	325	J.	6½	52.6	622
A.	5	36.38	331	F.	5½	52.5	632
S.	5	36.60	329	M.	5½	52.4	641
O.	5	36.69	337	A.	5	52.2	636
N.	5	36.11	352	M.	5	52.3	628
D.	5	36.35	362	J.	5	52.8	622
1923				J.	5	52.8	620
J.	5	36.78	387	A.	5	53.3	618
F.	5	37.05	422	S.	5	54.2	600
M.	5	37.18	424	O.	5	54.7	587
A.	5	36.54	415	N.	5	54.9	595
M.	5	36.74	407	D.	4	56.5	604
J.	5	36.68	409	<p>Discount rates have been taken from Bulletin of Statistics of the League of Nations. Circulation and price figures have been taken in part from the same sources and from European Currency and Finance, op. cit.</p>			
J.	5	36.92	407				
A.	5	37.36	413				
S.	5	37.62	424				
O.	5	37.67	421				
N.	5	37.32	443				
D.	5	37.90	459				

* In billions.

CHAPTER XXVI

PRICE STABILIZATION AND QUANTITY THEORY

Quantity Theory and Stabilization Plans—Antecedents of Author—Challenge of Quantity Theory—Causal Significance of Money Factor—As a Source of All Other Changes—As an Effect Rather Than a Cause—The Austrian Experience—The Greenback Experience—The German Experience—Causal Origin in Monetary Supply and Proportionality of Changes—Theory of Elasticity and Money as a Causal Factor—Functional Relationship of Money and Credit—Statistical Evidence and a Rigid Ratio—Limits of Variation—Changes Within these Limits and Price Control—Velocity of Circulation of Money and Credit as Independent Variables—Business Activity and Changes in Price Levels—Need for Preventing Price Changes—The Gift of Prophecy—Compensatory Changes in Individual Prices—An Automobile Ride—The Quantity Theory as an Intellectual Tool—Recognition of Limitations—Plausible Hypotheses and Precise Physical Laws—Scientific Theory and Practical Engineering.

THE great majority of these plans lean heavily upon the quantity theory. The Fisher plan assumes that the increase in the gold content of the dollar will stimulate the demand for gold in the arts thus diminishing the amount of gold available for money and with a reduction in the supply of gold the value of the unit will rise. In the statement of the plan itself Fisher does not offer the theory underlying its expected operation. However the works of Fisher leave us in no doubt as to his monetary theories.¹ In fact such an enthusiastic endorser of the philosophy on which the stabilized dollar is based as Professor Albert C. Whitaker has expressed the opinion that he would be surprised if any one but a quantity theorist ever supported the plan.² The Hawtrey Plan is based upon a limitation in the quantity of uncovered currency with expansion and contraction to take place through the mechanism of a general gold exchange standard. A lack of faith in the postulates of the quantity theory will preclude the acceptance of this pro-

¹ See, *The Purchasing Power of Money*, op. cit.

² *American Economic Review* Supplement, March, 1913, p. 32.

posal. Mr. Hawtrey's attitude on this matter is not in doubt.³ Keynes is a well known advocate of the quantity theory and his plan rests unequivocally upon it. The Strong amendment to the Federal Reserve Act proposes that the powers of the Federal Reserve Banks in regulating the discount rate and through open market operations should be used to control the supply of money and credit to the end that prices may be stabilized. Again the fundamental premise is the quantity theory. Carl Snyder proposes to limit the gold eligible to serve as a reserve for banks and Lehfeldt would have the gold mines under united control that the annual addition to our gold supplies could be so regulated as to achieve stability in prices. Both remedies derive their validity from the quantity theory.

The other plans are much less dependent upon any underlying theories and one, that of Professor Knapp treats the quantity theory with positive scorn.⁴ The Lewis plan suggests a composite standard instead of gold, the Genoa Plan is interested primarily in stability in terms of gold although it does suggest the value of maintaining stability of purchasing power while the Ford plan is an anachronism and would find itself in a much more receptive and congenial age in the days of colonial banking. In fact it is doubtful if the author of that plan ever heard of the quantity theory.

Since the most serious of these plans as well as the greater number rest categorically upon a foundation whose validity is actively contested it becomes necessary to point to some assumptions of the quantity theory which have not won general acceptance and are still classed by many responsible thinkers as plausible but unwarranted pre-suppositions. Before embarking on this task it is the wish of the writer to indicate that he has been nurtured in a school of economic thought which looks with favor upon the quantity theory and that the first preliminary essay on the sub-

³ *Currency and Credit*, Longmans, Green and Co., London, 1923, 2nd edition, p. 53.

⁴ *The State Theory of Money*, op. cit., p. 257.

ject of stabilization was offered in a seminar conducted by the ablest living exponent of the quantity theory, Professor Edwin Walter Kemmerer, and that his association with Professor Kemmerer as a student and as a teacher has provided the inspiration for this work. It cannot therefore be said that he approaches his task with hostile prejudgment or that he is handicapped by an inadequate or unsympathetic understanding of the quantity theory.

It may be said at the outset that the quantity theory has considerable deductive justification. It states in effect that the law regulating the value of money is simply a particular application of the law of supply and demand. If the supply of cotton relative to the demand increases we expect the value per pound to drop and if the supply relative to demand decreases we expect the value to rise. Other things remaining the same we would expect the value of money to change in the same fashion as the value of cotton or of any other goods or services changes. However any one can concede as much and still be far removed from the quantity theorist. Money differs from other commodities in that its market value can be realized only by exchange. It is not consumed in the same sense that other goods are. It is the durative good *par excellence*. If, therefore, it can be passed freely from hand to hand without impairing its capacity to serve subsequently the same functions its supply, having regard now to the uses which money yields rather than the absolute number of units, must be this number of units multiplied by the number of times each unit on the average is able to serve. In other words the supply has two dimensions, the one being the amount of units in circulation and the other the rate of turnover. Which of these two factors, the amount of money or the velocity of circulation, is the most important? The quantity theorist states that the quantity of money is the independent and therefore controlling variable since the rate of circulation is a constant depending upon such factors as population distribution, the economic development of the community, the banking system, methods of payment and other factors

of a similar nature all of which tend to remain constant or at best change but slowly. The opposition contends that this is an *a priori* assumption and has never had statistical confirmation. For the sake of argument we may grant at this point the position of the quantity theorists that custom, habits of the individual and convenience maintain our money velocity at a constant. We are still far from establishing the proposition that the quantity of money, other things remaining the same, will govern the price level. In the United States money is the least important medium of exchange. We have an effective substitute in the form of credit. Its importance has been variously estimated at from 75 to 90 per cent of the whole, i.e., that proportion of all transactions are settled by checks rather than by money. What is the relation between money and credit? Most quantity theorists maintain that there is a functional relationship between the two and that credit is the dependent variable, i.e., the amount of credit is controlled by the amount of money and not vice versa. They are here sailing on thin ice for the very evidence which they adduce to prove their point not only fails to convince but tends to give aid and comfort to the opposition. Finally the quantity theorist is apt to underestimate the importance of the demand for money on the goods side. Granting the contentions of this school of thought we can state their proposition as follows. *The price level at any time is equal to the quantity of money in circulation multiplied by its velocity of circulation plus the quantity of credit in banks multiplied by the velocity of bank deposits, the sum of the two quantities divided by the amount of goods and services offered for money and credit. The causal factor in this total of six factors is the quantity of money.* Now it is realized that much hairsplitting could be done with this statement but for the purpose of this treatise it is adequate. This position has certain defects and we may express them in the form of the skeptic's questions.

Is the quantity of money the causal factor in this equation?

Is the quantity of credit a function of the quantity of money?

These, in our view, are the chief weaknesses of the quantity theory. Minor difficulties are involved in the following questions.

Is the velocity of circulation of money a constant?

Is the velocity of credit a constant?

Is it not possible that price changes may come first and cause changes in one or more of the other factors?

What right have you to assume the relative unimportance of the goods factor in the equation of exchange?

The first question dealing with the causal position of the money factor touches the most vital part of the whole theory. Unless the preponderant importance of the money factor can be sustained there will be little purpose in adopting far reaching plans of stabilization which hope to attain their end through a regulation of the supply of money. Perhaps we can do no better than to examine the evidence submitted by one of the most ardent advocates of the quantity theory, namely, Irving Fisher. This procedure has the additional advantage of enabling us to depend upon one whose name at the same time has been intimately associated with the movement toward stabilization. Furthermore there will be no question of straining the facts to suit the ends of criticism. There is no doubt in Professor Fisher's mind that the purchasing power of money "depends exclusively on five definite factors: (1) the volume of money in circulation; (2) its velocity of circulation; (3) the volume of bank deposits subject to check; (4) its velocity; and (5) the volume of trade. . . . In my opinion the branch of economics which treats of these five regulators of purchasing power ought to be recognized and ultimately will be recognized as an exact science, capable of precise formulation, demonstration, and statistical verification." ⁵

To continue Fisher's argument relative to the causal importance of money,

⁵ *The Purchasing Power of Money*, 1st edition, preface, p. vii.

"Since, then, a doubling in the quantity of money: (1) will normally double deposits subject to check in the same ratio, and (2) will not appreciably affect either the velocity of circulation of money or of deposits or the volume of trade, it follows necessarily and mathematically that the level of prices must double. While, therefore, the equation of exchange, of itself, asserts no causal relation between the quantity of money and price level, any more than it asserts a causal relation between any two other factors, yet, when we take into account conditions quite apart from that equation, viz., that a change in M produces a proportional change in M' , and no changes in V , V' , or the Q 's, there is no possible escape from the conclusion that a change in the quantity of money (M) must normally cause a proportional change in the price level (the p 's)."⁶

It is well to keep in mind at this point the algebraic expression of the quantity theory which Professor Fisher uses

MV plus $M'V'$ equals summation pQ

where M	"	quantity of money in circulation
V	"	velocity of money
M'	"	volume of deposit currency
V'	"	velocity of deposit currency
p	"	average price of goods exchanged
Q	"	volume of goods exchanged

He continues "We may now restate, then, in what causal sense the quantity theory is true. It is true in the sense that one of the normal effects of an increase in the supply of money is an exactly proportional increase in the general level of prices.

"To deny this conclusion requires the denial of one or more of the following premises upon which it rests:

- "(1) The equation of exchange $MV + M'V' = pQ$.
- "(2) An increase of M normally causes a proportional increase of M' .
- "(3) An increase of M does not normally affect V , V' , or the Q 's."⁷

We may grant the first premise offhand since the total amount of goods multiplied by the average price paid for

⁶ *Ibid.*, p. 157.

⁷ *Idem.*

them must be equal to the sum of money and bank credit paid for them.

As a matter of mathematical necessity we would likewise concede that an increase in M other things remaining the same would cause an increase in p . But can we not likewise urge the mathematical inexorability of the proposition that other things being equal an increase in p would cause an increase in M or V or M' or V' or a decrease in Q ? Can we not likewise urge, therefore, that any one of the other five factors may just as truly be causal factors as M itself? If this be so then our efforts to stabilize the purchasing power of money must be directed not toward one factor in the equation of exchange but rather to all six. There is evidence to show that these other factors sometimes initiate changes in the equation and tend to confound the literal acceptance of the quantity theory.

J. van Walré de Bordes in his excellent work on *The Austrian Crown*⁸ comes to the conclusion that the quantity of money instead of being the cause of price changes is an effect two full steps removed from the cause. The starting point is an increase in the exchange rates, the next step is a rise in domestic price level and finally as a *consequence* of this the government is compelled to increase its note issue.

"In 1922 it was not the price level which determined the rate of exchange, but *the rate of exchange which determined the price level.*"⁹

"As a matter of fact the increase in the circulation was mainly due to the increase in Government expenditure occasioned by the rise in prices."¹⁰

Our causal sequence here is as follows:

Rise in foreign exchange rates—Rise in the price level
—Increase in the Circulation.

In view of what we have already said on the psychological nature of value as contrasted to the mechanical conception implicit in the literal quantity theory we might quote this

⁸ P. S. King & Son, Westminster, 1924.

⁹ *Ibid.*, p. 172.

¹⁰ *Ibid.*, p. 160.

author's explanation of the change in the external value of the crown.

"It was primarily a *psychological* question. Everything depended upon confidence. The less confidence the public felt in the future of Austria, the more it endeavored to hoard foreign exchange at all costs and the higher soared the rates of foreign exchange. The demand for foreign exchange, while seeking to anticipate a fall, actually caused it to come to pass."¹¹

In our own country the work of Wesley C. Mitchel on the greenback casts doubt on the causal priority of the money factor. If a change in the price level is the effect of a change in the quantity of money then the latter must precede the former. We cannot expect heat to start a fire from which the heat which started the fire was supposed to have come. He shows that in many cases the change in the premium on gold was caused by mere announcements. This gold was one commodity among many and because of its importance an accurate statistical portrait of its movements has been preserved for us.

The premium on gold during this period could not have been due to the increased value of gold since its purchasing power in the rest of the world was actually declining. Furthermore it must have been declining in real value in this country more rapidly than elsewhere since our exports of gold during the period of the war exceeded our imports in each year excepting only the first. In 1861 imports of gold exceeded exports by \$14,900,000, but after the suspension of specie payments we find a steadily rising export balance mounting in 1864 to \$89,500,000. The average annual excess of exports over imports during the war period, 1861-1865 was \$40,933,000.¹² Like all other commodities and services gold seeks that market in which it can obtain the greatest rewards and we rarely find goods migrating from communities where their value is increasing.

Our experience with the greenbacks is particularly illuminating in showing how tenuous is the bond between the

¹¹ *Ibid.*, p. 195.

¹² Statistical Abstract of the United States, 1925, p. 437.

physical magnitudes which are supposed to determine prices and the actual reaction of prices. That prices are ultimately a psychic phenomenon rather than physical is strongly indicated. On June 11, 1862 the gold price of a hundred dollars of currency declined from \$96.74 to \$95.69, roughly one per cent in the course of a single day. On June 7th Mr. Chase had asked for another 150 million dollar issue of notes.¹³ This fact was announced to the public on June 12th. By the 15th currency had fallen to \$94.56. During the rest of June and the first week of July it became increasingly evident that the request of Mr. Chase would be granted and this growing conviction on the part of the public that this indefinite indebtedness of the government and this irredeemable media of exchange would be increased showed unmistakable reflections of diminishing esteem of the purchasing unit on the part of the public. When, on July 8th, the vote was taken on the second legal tender act the gold price of one hundred dollars of currency was \$89.79.¹⁴

It should be noted that this depreciation in the currency took place *before* the second issue was effected. It must also be remembered that if the increase in the price level consequent upon an increase in the note issue is a mechanical process and such Fisher indicates it to be, then some time must elapse before an increase in the currency has a chance to become diffused throughout the area in which it will cause an increase in the price level. This instance tends to show that value is a psychological phenomenon and not a mechanical effect of physical magnitudes. It is not intended to deny that the latter have an effect on value but there is a vast difference between influencing and controlling.

A recital of the events leading up to and including the passage of the third legal tender act offers compelling testimony to the fluctuating human appraisals of the value of the greenback in terms of one commodity.

¹³ Report of the Secretary of the Treasury, Dec., 1862, p. 10.

¹⁴ The average for that day.

"December 1, 1862, just before Congress convened, currency was worth \$76.94. Three days later a fall to \$74.63 was caused by a rumor that the annual finance report would recommend another issue of United States notes. A denial produced a reaction to \$76.63. But on the 8th Thaddeus Stevens introduced a bill providing for an issue of \$200,000,000, which brought about a relapse the next day to \$75.19. When he admitted, a few days later, that there was no chance of his measure passing, a slight rise followed. But January 8th the Committee of Ways and Means submitted a measure authorizing the issue of \$300,000,000 of United States notes. The currency fell to \$72.99. Six days later the House of Representatives passed a joint resolution for the issue of \$100,000,000 to secure the immediate payment of the army and navy. The fall reached \$67.57. The acquiescence of the Senate caused a slight further decline.

"Meanwhile the Ways and Means bill was under discussion in the House. When it was passed and sent to the Senate, the notes were depressed to \$65.90. Three weeks later the measure came back with the Senate amendments, one of which reduced the new issue of legal-tender notes from \$300,000,000 to \$150,000,000. A drop of \$1.46 followed the House's refusal to agree to the change. During the next two days it was thought in New York that the Senate would yield, and the decline of the currency continued to \$60.98. When this idea was dissipated there was another reaction. But February 26th the House yielded and passed the bill. This action made the increase of notes certain, and their value fell to \$57.97. After this extreme depression came a slight reduction to \$58.48 on the day the bill became a law."¹⁵

The increase in the obligations of the government was a very patent increase in the strain upon the ability of the government to redeem them. With every increase in the outstanding issues the probability of redemption became more remote. With every decision of the government to resort to the expedient of inflation to finance its desperate needs there was in prospect a multiplication of the media of exchange with no corresponding increase in the demand for them. The ultimate effect would therefore be a diminished value in exchange and the gold brokers in New York with their shrewd intellects observing the psychic pulses which would determine the future acceptability of these

¹⁵ *History of the Greenbacks*, pp. 199-200.

certificates of value, discounted their prospective diminution in power and expressed that discount in the barometer which they had so readily at hand, namely gold. To allege that there was no corresponding rise in prices is a subterfuge because even in this day we lack that statistical perfection which would enable us to determine from day to day the change in the purchasing power of money. It is a well known fact that price changes encounter social frictions which impede materially the diffusion of the influences which register with such fluid facility on the gold market. Very obviously wages and customary and contractual payments cannot be changed daily to conform to the changed valuations which a collective rationalization and impulse apply to the monetary unit.

COMPARISON OF THE CURRENCY VALUE OF GOLD AND THE PRICE LEVEL FOR
THE WAR PERIOD

	Gold ¹⁰	Wholesale Prices ¹¹
1860 January	100	100
April	100	100
July	100	100
October	100	100
1861 January	100	100
April	100	97
July	100	95
October	100	100
1862 January	103	100
April	102	100
July	116	103
October	129	117
1863 January	145	130
April	152	142
July	131	139
October	148	140
1864 January	156	161
April	173	175
July	258	200
October	207	208
1865 January	216	228
April	149	184
July	142	160
October	146	180

¹⁰ *History of the Greenbacks*, p. 245, Table VII.

¹¹ Median of 135 series of relative prices after averaging all closely related series, based upon data for wholesale prices given in the Aldrich Report and presented by Mitchell in *History of The Greenbacks*, p. 256, Table XIV.

This table indicates that the changes in the value of the greenback as measured by the quotations for gold were a fair indication of the change in purchasing power over all commodities sustained by the unit of currency during this period. There is no reason to suppose that the psychic factors which altered the estimate of the value of the unit in terms of gold did not likewise operate on the human beings who weighed the value of the unit in terms of other goods. Is it likely that a mechanical formula of value would operate in one case and not in the other? We have seen that it did not apply to gold and there is a striking correlation between changes in gold and the index of wholesale prices. Starting with the second quarter in 1862 we have fourteen changes to the end of 1865. There is agreement in the direction of the changes in both columns thirteen times. Only once, from July to October of 1864 do they move in opposite directions.

Consider the case of Germany. It is well to recall again Fisher's emphasis upon the inability of a change in the quantity of currency to affect the velocity of circulation of money and bank deposits. Also that "*the normal effects of an increase in the supply of money is an exactly proportional increase in the general level of prices.*"¹⁸

We find in Germany in January, 1924, a price level of 92.4 and a total circulation of 1,680,000,000 marks.¹⁹ In December, 1925, this circulation has mounted to 4,436,000,000 marks and the price level to 96.1 (See Chart No. 25 on page 444.)

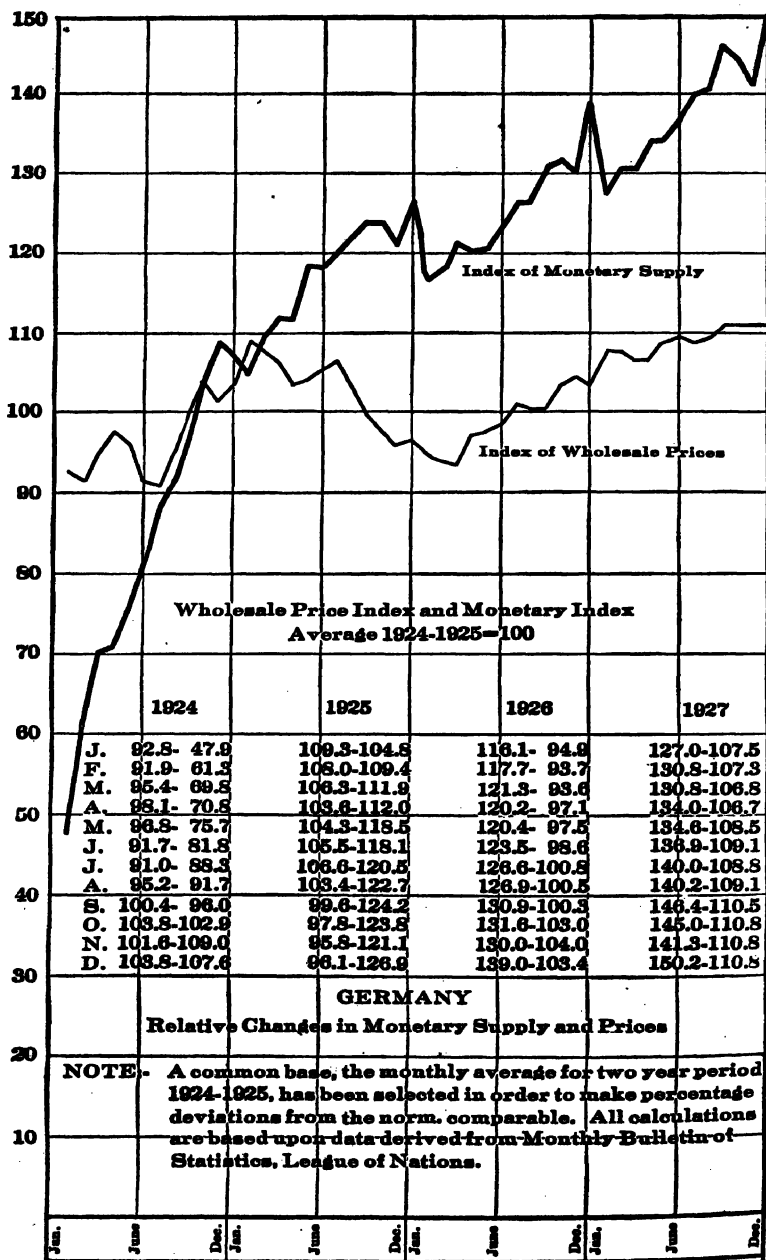
Nogaro calls attention to the phenomenon of a drop in prices preceding a contraction of the currency, the latter being according to the orthodox quantity theorist the cause of the former.

"If the price index (wholesale) and the monetary circulation (total circulation for the United States, note issue for other countries) are each put at 100 in 1919, a table issued by the League of Nations ('Memorandum on Currencies, 1913-1922,' Geneva, 1922, p. 11) shows up to the end of 1922 their respective move-

¹⁸ *The Purchasing Power of Money*, op. cit., p. 157.

¹⁹ Exclusive of coins.

STABILIZATION OF PRICES



ments every quarter in about fifteen countries. Now, in almost all, the fall in prices preceded the contraction of the currency—especially in the United States, Great Britain, France, Spain, Sweden, South Africa and Japan. In the last-named country the note issue even went on expanding until the end of 1921, the index reading 103.8, whereas the fall in prices began in January 1920 and fell from 111, the figure at which the index stood on that date, to 72.6 in December 1921.”²⁰

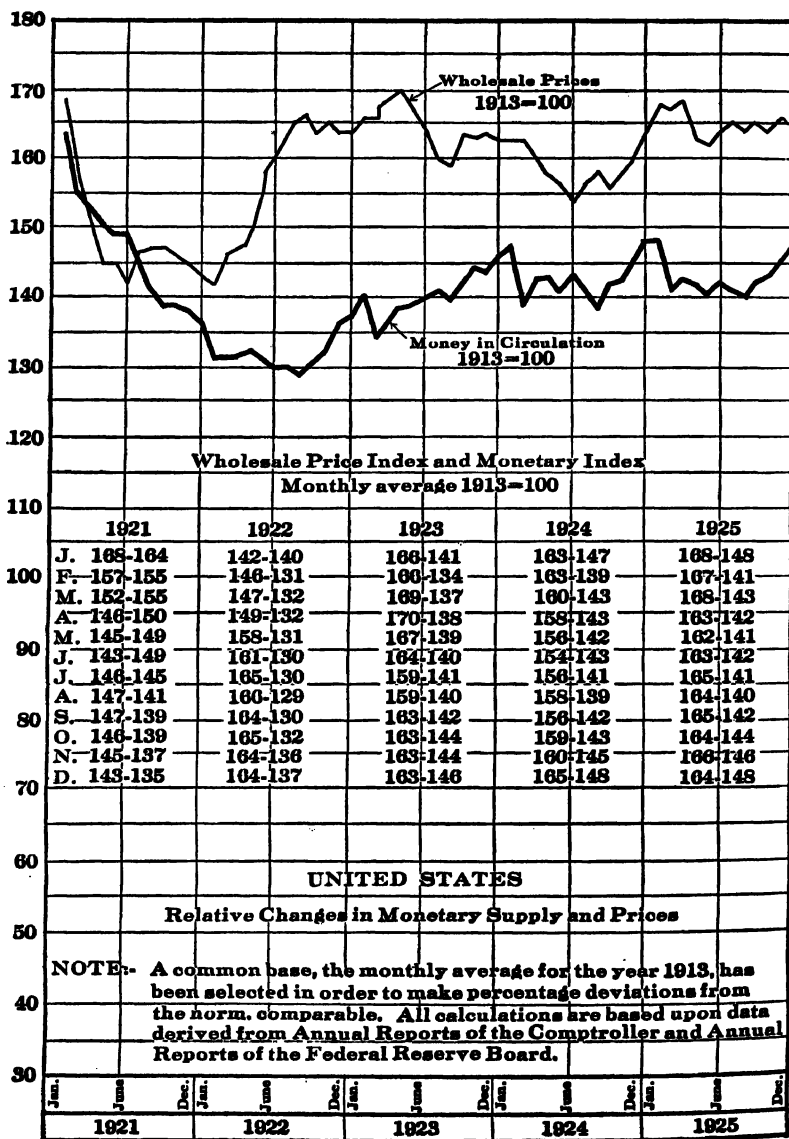
We find here that not only do the price changes precede the currency changes but are greater proportionately than these changes. Neither fact fits Fisher's theory and should give pause to the men who propose to regulate prices by manipulating the supply of currency in accordance with the quantity theory. Nogaro shows considerable restraint in his treatment of this phase of the quantity theory. For a comparatively hostile analysis we recommend B. M. Anderson's *The Value of Money*.²¹

We can attempt a certain amount of statistical examination of the proposition that changes in the quantity of money are causal and must precede price changes. The chart on next page shows us the course of wholesale prices and the quantity of money in the United States by months for the five year period 1921-1925. Whether the volume of money (as Fisher contends) is the cause of price changes or changes in price are the cause of changes in the supply of money the cause must precede the effect by a certain amount of time. Fisher has suggested two months although he has on one occasion taken nine and a half months not because that was the actual lag but because it enabled him to prove a high correlation between changes in the price level and changes in business activity.²²

²⁰ Nogaro, Bertrand, *Modern Monetary Systems*, P. S. King & Sons, Westminster, 1927, p. 109.

²¹ The Macmillan Company, New York, 1917, pp. 292-314, and particularly pp. 295-298.

²² Irving Fisher, *Our Unstable Dollar and The So-Called Business Cycle*, Journal of the American Statistical Association, June, 1925, p. 24. Fisher starts out by assuming that business fluctuations are caused by changes in the value of the dollar. He then carefully sorts the available evidence and selects that which will prove his assumption ignoring that which will deny it. "It was this latent symmetry, rather than empiricism, which first



In considering the statistics for this five year period we shall record changes as positive or negative only where both factors, i.e., quantity of money and prices change. If either factor does not change we shall regard the result as inconclusive of either positive or negative correlation and assume that it is neutral. In considering the *causal significance of the volume of money* we shall record the correlations as positive if an increase in the quantity of money is followed by an increase in prices or a decrease in the volume of money is followed by a decrease in prices. An inverse correspondence will be regarded as negative. In considering the premise that *changes in the price level* will bring about changes in the quantity of the circulating media we shall assume the correspondence to be positive if a rise in prices is followed by an increase in money and a fall in prices followed by a decrease and consider the correspondence negative if prices and money move in opposite directions.

Testing for money as the causal factor we find that a one month lag will show positive correlation 23 times, neutral 16 times, and a negative 19 times, a two months' lag positive correlation 18 times, neutral 16 times, and negative 23 times, while a three months' lag will show positive results 21 times, neutral 16 times, and negative 20 times. If we add the results of our three tests we have positive correlation 62 times, neutral 48 and negative 62 times. On the whole this does not appear to be very helpful testimony for the rigid quantity theorist.

Starting with the price level as the cause of changes in the volume of currency and allowing for a lag of one month we find a positive correspondence 21 times, neutral 15 times and negative 22 times. For a two months' lag the

recommended this type of distribution. The ordinary (arithmetically) "normal" distribution would involve the apparent absurdity of bringing some of the effects earlier than their supposed cause." (*Idem.*) His hypothesis is the very proposition whose truth he is attempting to establish. By virtue of this hypothesis he justifies the juggling of the evidence and then having proved his "proposition" he comes to the conclusion that the business cycle is a myth since the fluctuations are due mostly to changes in the value of the dollar. (*Ibid.*, p. 201, conclusion No. 12.)

results are positive 24 times, neutral 15 times, and negative 18 times, while for a three months' lag the results are respectively, 27, 13 and 15. By adding these results we find for the three tests a positive correlation of 72, neutral 43 and negative 55.

TABLE OF CORRELATION TESTS

<i>Lag</i>	<i>Price as the causal factor</i>		
	<i>Positive</i>	<i>Neutral</i>	<i>Negative</i>
1 month	21	15	22
2 months	24	15	18
3 months	27	13	15
Total	72	43	55

<i>Lag</i>	<i>Money as the causal factor</i>		
	<i>Positive</i>	<i>Neutral</i>	<i>Negative</i>
1 month	23	16	19
2 months	18	16	23
3 months	21	16	20
Total	62	48	62

While this evidence is not conclusive as to the causal significance of the price factor it is conclusive in the negative sense that changes in the volume of money do not as a *general* rule, within the quantitative limitations prevailing during this period, cause changes in the price level if we grant that a cause must precede an effect.

In connection with the causal position of the volume of money it is well to remember that our whole theory of elasticity of currency assumes that money is a passive factor and that trade requirements are the active factor. We are not aware that any one has suggested that the currency and credit of a country must expand during certain seasons of the year in order to *permit* the seasonal fluctuations so characteristic of a country in which agriculture is a leading industry. Or has any one suggested that the media of exchange of a country shall be kept stable in volume throughout the year in order to stabilize business and eliminate our seasonal fluctuations? Yet this would be the logical conclusion to be drawn from the attribution of exclu-

sive causal significance to M. We know as a matter of general knowledge that the inability of our currency and credit to expand under the National Banking System was a cause of embarrassment but it certainly had no effect on the harvesting period of the farmer. We know that every Christmas there is a substantial increase in currency and bank credit throughout the United States. Does this cause an increase in prices or is the increase in our M the *result* of other factors. Before the Federal Reserve System was established there was no convenient way in which the quantity of currency could be increased each Christmas in order to provide holiday requirements. Yet business activity reaches a peak at that time each year. To be consistent it would have to be contended that the relative decrease in the media of exchange must have caused a drop in the general price level each Christmas. Mathematically that conclusion is irresistible. Let us take a twenty-five year

Comparison of December Prices with Annual Prices, 1890-1914

Year	Average	December	Above	Below	
1890	82	81		1	(Index of Wholesale Prices, Bureau of Labor Statistics)
1891	79	78		1	
1892	76	77	1		
1893	76	73		3	
1894	70	69		1	
1895	69	69			
1896	66	66			
1897	66	67	1		
1898	67	69	2		
1899	75	80	5		
1900	82	81		1	
1901	80	82	2		
1902	84	85	1		
1903	84	83		1	
1904	84	84			
1905	86	89	3		
1906	91	94	3		
1907	96	93		3	
1908	91	91			
1909	94	98	4		
1910	97	96		1	
1911	95	96	1		
1912	99	100	1		
1913	100	99		1	
1914	98	97		1	
Total			24	14	

period from 1890 to 1914 and compare the price level for December of each year with the price level for the year.

Again our evidence is negative but it tends to show that prices have usually been a little higher in December when the relative amount of currency was less than for the year as a whole. If we consider the general price level for the same period we find prices for December higher than the average for the year, twelve times and lower than the average for the year three times.²³

If the evidence concerning the causal nature of the quantity of money is so tenuous how can we justify a vast social experiment in price stabilization on the basis of a control of M?

Our second doubt concerning the quantity theory is based on the alleged functional relationship of money and credit where credit is the dependent variable. Let us consider first the evidence of these two magnitudes presented by Fisher. It should be understood that he does not offer them in proof of the proportionality between M and M'. That he has already established deductively.²⁴ They are offered in another connection and we shall take the liberty of using them at this point.

M is the estimated money in circulation in the United States in billions of dollars.²⁵

M' equals individual deposits subject to check in billions of dollars.²⁶

Year	M	M'	M'/M
1896 .....	.87	2.68	3.08
1897 .....	.88	2.80	3.18
1898 .....	.96	3.19	3.32
1899	1.03	3.90	3.78
1900	1.17	4.40	3.80
1901	1.22	5.13	4.20
1902	1.26	5.43	4.31
1903	1.38	5.70	4.13
1904	1.37	5.80	4.23
1905	1.45	6.54	4.51
1906	1.59	6.84	4.30
1907	1.63	7.13	4.38
1908	1.63	6.60	4.05
1909	1.63	6.75	4.14

(The third column has been calculated by the author.)

²³ Snyder, Carl, *Business Cycles and Measurements*, op. cit., p. 286.

²⁴ *The Purchasing Power of Money*, op. cit., pp. 49-52.

²⁵ *Ibid.*, p. 280.

²⁶ *Ibid.*, p. 281.

These figures fail to show even an approximate proportionality and we find the year of the highest ratio, 1905 with a ratio of 4.51 exceeds our lowest ratio, 3.08 for 1896 by 46.4 per cent.

In order to show what a change has occurred in this ratio and without overloading this work with statistical material we may take the same two quantities for the five-year period 1922-1926.

Year	M	M'	M'/M
1922	4.37	21.58 ¹	4.94
1923	4.73	22.02 ²	4.66
1924	4.75	23.86 ³	5.02
1925	4.74	25.93 ⁴	5.47
1926	4.94	24.67 ⁵	4.99

The results here are no different than those based upon Fisher's figures. Our superstructure of credit is a little larger which, in view of the improvement in our banking system, is to be expected. There is no discernible constancy in the ratio of M/M' .

It is not intended to deny that there is any relation between these two magnitudes. In a country where both bank credit and money are used in making payments and where the convertibility of the former into the latter is maintained the amount of money undoubtedly establishes some outside limit beyond which bank credit cannot expand. But limitation in the range of fluctuation on the upper side and fixity of ratio are two entirely distinct concepts. We can and do admit the former but must deny the latter. The failure to do so would be inconsistent with the facts. In the absence of such a rigidity of relationship what effect will a given increase or decrease in the quantity of currency in the country, effected through one of our stabilization plans, have upon the price level? If we take the years 1923, 1924 and 1925 we find the quantity of money in circulation an approximate constant yet there is an increase in the total effective means of exchange of 3.92 billions of dollars. In

¹ Report of Comptroller of the Currency, 1922, p. 145.

² *Ibid.*, 1923, p. 121.

³ *Ibid.*, 1924, p. 116.

⁴ *Ibid.*, 1925, p. 45.

⁵ *Ibid.*, 1926, p. 41.

1926 we find an increase of approximately 200 millions in currency and at the same time a decrease in deposit currency of 1,260 million so that in spite of our increase in money, which was supposed to have brought with it a proportional increase in bank credit we have an actual decline in effective purchasing power amounting to over a thousand millions! What can we say of a theory which fails so signally to explain the facts? What shall we say of the judgment of the men who propose to embark on a far-reaching experiment on such inaccurate premises?

The strict quantity theorist further assumes that the velocity of circulation of money and of deposit currency are constants and are unaffected by changes in the quantity of money in circulation.²⁷ On this point the calculations of Fisher are altogether unsatisfactory. No acceptable method of measuring this magnitude has yet been devised and Fisher's method of the calculation of velocity of money like his calculation of the lag of prices (see footnote, page 445) is born of the necessities of his case rather than observable facts. He operates from two hypotheses. The first starts with a calculation of velocity for 1896 of 18.6 and another for 1909 of 21.5, both of which seem extremely low, and the second assumes an even change throughout these years. In other words the variation from year to year is established by mathematical interpolation. Naturally this would distribute the change equally over a long period and yield a very stable magnitude. His other hypothesis of "extreme variability V varying as needed to preserve evenly changing ratio of MV to $M'V'$ "²⁸ is a case of multiplying one doubtful hypothesis by another. That the changing value of money is itself a cause of a change in the velocity of circulation of money is abundantly proved by the post-war experience of the paper currency ridden countries of Europe. This is based upon the entirely sound principle that it is an error to hold an asset which is declining in value if it is possible to exchange it for another that does not decline or at least not

²⁷ *The Purchasing Power of Money*, op. cit., p. 154.

²⁸ *Ibid.*, p. 478.

as rapidly. Keynes, himself, gives an excellent illustration of this in the following passage:

"In Moscow the unwillingness to hold money except for the shortest possible time reached at one period a fantastic intensity. If a grocer sold a pound of cheese, he ran off with the roubles as fast as his legs could carry him to the Central Market to replenish his stocks by changing them into cheese again, lest they lost their value before he got there; thus justifying the prevision of economists in naming the phenomenon 'velocity of circulation'! In Vienna, during the period of collapse, mushroom exchange banks sprang up at every street corner, where you could exchange your krone into Zurich francs within a few minutes of receiving them, and so avoid the risk of loss during the time it would take you to reach your usual bank. It became a seasonable witticism to allege that a prudent man at a café ordering a bock beer should order a second bock at the same time, even at the expense of drinking it tepid, lest the price should rise meanwhile."²⁹

In view of the difficulty of measuring this quantity it would be far safer to assume that money circulated at least as rapidly as deposit currency. With the ubiquity of banking facilities there is no reason for carrying large quantities of currency. Inconvenience and safety would both induce the average man no less than the average merchant to keep as little on hand as possible. While the actual magnitudes themselves may not be the same the chances are that the same causes which tend to bring about changes in the velocity of bank deposits will likewise operate on the velocity of money.

The following table gives us the rate of turnover of bank deposits by months and by years for the period 1919 to 1925. We find here an extreme range from 33.5 to 49.8, a change from the lower to the upper limit of approximately 49 per cent. Each year there is on an average an approximate fluctuation of 25 per cent. It should be remembered that these changes in the rate of turnover are equivalent to changes in the quantity of currency and credit combined of similar percentages. To put it in another form a decrease in the

²⁹ *Monetary Reform*, op. cit., p. 51.

supply of bank credit of 20 per cent would be exactly offset by an increase in the rate of turnover of 25 per cent. It is ridiculous in the face of this evidence to argue that V' is a constant. On the contrary there is here substantial inductive testimony to establish its position as an independent variable of greater importance than money itself, greater because it applies to a magnitude approximately five times as important as the quantity of money.

VELOCITY OF BANK DEPOSITS—ANNUAL RATE OF TURNOVER—
ACTUAL FIGURES²⁰

141 Cities								
	1919	1920	1921	1922	1923	1924	1925	1926
J.	40.0	45.2	41.9	40.7	42.1	43.0	44.1	....
F.	38.7	42.5	38.1	40.9	43.0	43.9	43.9	....
M.	36.5	41.6	36.0	39.8	41.9	42.2	43.1	....
A.	37.1	41.6	36.2	41.5	40.8	40.9	40.7	....
M.	40.8	40.9	38.0	40.4	41.6	41.0	44.3	....
J.	45.1	40.4	37.8	40.9	42.3	41.6	44.3	....
J.	45.5	40.1	37.4	39.2	39.5	38.8	42.4	....
A.	40.4	37.0	33.5	34.7	35.6	36.5	39.2	....
S.	42.0	39.7	37.9	39.0	39.1	37.5	42.6	....
O.	45.9	43.4	40.5	43.8	40.8	39.3	47.2	....
N.	48.8	45.0	42.4	40.9	43.5	42.3	48.3	....
D.	47.6	45.8	42.6	43.8	46.2	43.6	49.8	....
Total	507.4	503.2	462.3	485.6	496.4	490.6	529.9	....
Average	42.3	41.9	38.5	40.5	41.4	40.9	44.2	....
7-yr. average..	...	...	...	41.4	...	...	...	....

If we have a bureau in Washington charged with the duty of regulating the quantity of money in accordance with the premises of the quantity theory and with a view to stabilizing prices how are they going to control this independent factor? Assuming the rate of turnover of money and bank deposits to be the same an increase of five per cent in the quantity of money will be exactly offset by a decrease of one in the rate of deposit currency velocity or an increase of one in the rate of turnover would necessitate a compensating decrease of five per cent in the amount of money. Greater changes in the rate of turnover of bank deposits have often occurred in the course of a single month.

²⁰ Carl Snyder, *Business Cycles and Business Measurements*, p. 294.

In September of 1921 the rate of turnover was 37.9 as compared to 33.5 for the preceding month, a difference of 4.4 units of velocity. Just exactly how would the bureau handle this behemoth?

We have already discussed the changes in the quantity of money as the necessary origin of changes in the price level. That this is invariably the case is extremely doubtful. The Austrian experience and the seasonal fluctuations in the supply of currency in this country and Canada show that it is entirely possible for money to be the passive factor and that fear, the state of business confidence and fluctuations in trade and the volume of production may be independent causes of a change in the demand for means of payment. This increased pressure for money may be satisfied by an increase in the rate of turnover of money and credit, by an increase in the absolute amounts of these media or by both.

In relying upon the quantity theory as the theoretical basis for our various schemes of currency reform we encounter another difficulty. It is assumed that in the equation of exchange there are but two independent variables, the quantity of money and the quantity of goods which represent a demand for money.

"We now proceed to show that (except during transition periods) the volume of trade, like the velocity of circulation of money, is independent of the quantity of money. An inflation of the currency cannot increase the product of farms and factories, nor the speed of freight trains or ships. The stream of business depends on natural resources and technical conditions, not on the quantity of money. The whole machinery of production, transportation, and sale is a matter of physical capacities and technique, none of which depend on the quantity of money. . . . We conclude, therefore, that a change in the quantity of money will not appreciably affect the quantities of goods sold for money." ²¹

This is distinctly contrary to all the lessons of economic history. Inflation is the stimulating drug which spurs on

²¹ *The Purchasing Power of Money*, op. cit., pp. 155-156.

production and the volume of trade. The rise in prices and the lag in certain costs increase the margin of profit of the manufacturer. Profits constitute his peculiar incentive and their increase urges him on to greater productive efforts. It stimulates the trader since he is assured of increasing prices for goods purchased at a lower price level. Rising prices are the magic virus which, injected into the body economic, produces the fever of production and trade and speculation. Recognizing this fact one writer on stabilization has gone so far as to formulate the various principles which are to guide the body charged with stabilization and has decided that a policy in management which will never permit any single important commodity to sustain a price decline is the best.³² His argument is that banking policy should be so directed as to bring about maximum production, and that rising prices are a better stimulus to business than a decreased cost of living.³³

On the other hand declining prices have just the opposite effect. The entrepreneur is faced with evaporating profit margins and falling prices have therefore a distinctly depressing effect on business. We have heard much, recently, about the present era of "profitless prosperity" and the complaints are centered about the fact that declining prices and the maintenance of reasonable profit margins which serve as the incentive to business enterprise are incompatible. This point need not be urged at great length since it is a matter of common observation and quite generally acknowledged. How does it effect the problem of stabilization in so far as it rests upon the quantity theory? Let us return to our algebraic form of the price equation

$$P = \frac{MV + M'V'}{Q}$$

³² Robertson, D. H., *Banking Policy and the Price Level*, P. S. King & Son, Westminster, 1926, p. 26.

³³ For a different view of the effect and desirability of falling prices see Soule, George, *The Boon of Falling Prices*, a paper read at the fortieth annual meeting of the American Economic Association, Washington, D. C.

If we have here only two independent variables the M in the numerator and the Q (volume of production and trade) in the denominator an increase in one may be offset by an increase in the other and the value of the fraction maintained. Thus many of the enthusiastic approvals of schemes of stabilization are accompanied by expressions of amazement that such an obvious reform has never been undertaken. All you have to do is to acquire control of the quantity of money and as trade declines decrease the quantity of money. As reasoning we may consider it a perfect rhapsody in logic. Among other things it ignores the fact that a change in the numerator of the fraction which constitutes the right hand member of the equation cannot be made without at the same time affecting the denominator. There may be times when that denominator is not affected. On the other hand in most cases it will be influenced. Nor do we know precisely how much. How far will a given increase in prices stimulate trade? The answer is one of the capricious imponderables in the equation of exchange.

Granting that the quantity theory is all that its friends claim how will it work out as the basis of any stabilization plan? If it is to serve any useful purpose it must prevent price changes rather than cure them after they have occurred. Now price changes are supposed to be the invariable effects of changes in the supply of money. To prevent these changes action must be taken bearing on the medium of exchange at some point sufficiently in advance of these prospective changes to insure their abortion. That requires a knowledge of the effects in the future of any given state of the currency medium. How accurate has been the prevision of some of the friends of the quantity theory? Two of the men whose plans we have considered are on record with prophecies and we are in a position to gauge their accuracy.

"The Higher Level Permanent"

"We are on a permanently higher price level, and the sooner the business men of the country take this view and adjust them-

selves to it the sooner will they save themselves and the nation from the misfortune which will come if we persist in our false hope.

"The general level of prices is dependent upon the volume and rapidity of turnover of the circulating medium in relation to the business to be transacted thereby. If the number of dollars circulated by cash and by check doubles while the number of goods and services exchanged thereby remains constant, prices will about double.

"The great price changes of history have come about in just this manner. The 'price revolution' of the sixteenth century came upon Europe as a result of the great influx of gold and silver from the mines of the New World. Europe was flooded with new money. More counters were used than before in effecting exchanges and prices became 'high.' People talked then of *temporary* 'inflation,' just as they talk of it now. But it was not temporary: It was a new price level.

"A similar increase in prices all over the world occurred between 1896 and 1914, following the discovery of the rich gold fields of South Africa, Cripple Creek, and Alaska, the invention of the cyanide process in mining, and the vast extension of the use of bank credit. . . .

"Business men should face the facts. To speak reverently of 1913-14 prices is to speak a dead language to-day. Price recessions have been insignificant. The reason is that we are on a new high-price level, which will be found a stubborn reality. Business men are going to find out that the clever man is not the man who waits, but the one who finds out the new price facts and acts accordingly." ³⁴

This statement appeared in June of 1919. The following figures are a measure of the accuracy of the prediction. In June the index of wholesale prices of the Bureau of Labor statistics was 203. Two years later it stood at 142.

Carl Snyder in testifying before the Committee on Banking and Currency of the House of Representatives on April 14, 1926 states that the experience of the last three or four years has shown that the relation between credit and prices is not as precise as had been supposed. There had been an

³⁴Irving Fisher, *Are Prices Coming Down?* The American Review of Reviews, June, 1919, pp. 595-598.

increase of one-third in the demand deposits of the country but no comparable increase in production. During this period the trade of the country had grown only half as fast as the volume of demand deposits. Yet despite this disparity in the relative increase of credit and trade there has been no apparent effect on the general price level.³⁵ He might also have indicated that the rate of turnover of bank deposits had increased from 38.5 in 1921 to 44.2 in 1925 so that in addition to an increase of one-third in total bank deposits we have also an increase in the rate of turnover of approximately 15% (See table on page 454).

Referring to this disparity and indulging in mild prophecy he states,

"Personally it would seem to me to suggest that the price level may more likely rise in the next year or two—the broad average—than seriously to fall; but it remains to be seen whether that will be the effect or not. It is very difficult to say, and that is one of the things that makes this whole question so difficult to handle—the conflicting evidence or the absence of clear evidence."³⁶

Using this very modest expression of the probable issue of the price making elements as they appeared to an eminent student of the subject we can from the vantage point of observation after the event measure the conformity of event to prediction. Using the wholesale price index of the Bureau of Labor and the level in April 1926 as the base we have the following changes:

1926		1927		(Federal Reserve Bulletin)
A.	100	J.	97	
M.	101	F.	96	
J.	101	M.	95	
J.	100	A.	94	
A.	99	M.	94	
S.	100	J.	94	
O.	99	J.	94	
N.	98	A.	95	
D.	98	S.	97	

³⁵ Stabilization Hearings, H. R. 7895, op. cit., p. 603.

³⁶ *Ibid.*, pp. 603-604.

Thus while we have an expectation of a rise in prices based on an increase in the quantity of credit relative to the volume of trade we have an actual drop in the general price level. The idiosyncrasies of price levels serve to confound the most competent prophets.

The author of one of our plans has asserted that it takes nine and a half months⁸⁷ for a given increase in the currency to attain its maximum effect on the price level. Therefore if a given change in the price level is to be forestalled it must be foreseen by nine and a half months.

If this Delphic quality is lacking any pressure exerted after the price has changed is comparable to the locking of the stable door after the steed has fled. If the pressure is applied nevertheless, there will be necessary another readjustment in business, in demand and supply and a change in the prices of some or all articles to bring the level back to the original starting point. It is hardly to be expected that this will be conducive to the stability of business or to the mental tranquility of the men whose fortunes have become the plaything of a group of men administering a price level to realize a Utopian monetary ideal.

We may consider another difficulty involved in the quantity theory. The price level is a mathematical concept and is the average of a number of weighted price relatives. If we set as our purpose an absolutely stable price level or one that can fluctuate only within narrow limits it means that a rise in the price of any important group of commodities will necessitate a fall in some other group in order to compensate for such a rise. The writer ventures to assert that the effort to control the price level rigidly would constitute one of the most menacing and disturbing factors that has ever confronted American industry. In practically all the proposals for stabilization on an inflexible basis it has been denied that there is any intention to control prices in the sense that every commodity will have its fixed price.

This can well be accepted without extenuating the sinis-

⁸⁷ Irving Fisher, *Our Unstable Dollar And the So-Called Business Cycle*, Journal of the American Statistical Association, June, 1925, p. 24.

ter implications of the scheme. If the general price level remains fixed then every advance of a commodity or group of commodities *must* be compensated by the fall in price of some other commodity or group of commodities.²² Instead of being plagued by the unpredictable aberrations of a single commodity we shall have the evil multiplied. Every action must have an equal and opposite reaction and this can only mean that one advance must be balanced by another fall. If the drought destroys the wheat crop of Russia and the price of wheat rises in the United States as a consequence then that rise must be balanced by a similar fall in the price of cotton, let us say. It may give the cotton grower some measure of consolation to know that the price level is absolutely stable. It may yield him some slight comfort to know that the gain of his rural brethren of the middle west has been the direct cause of his own loss. It may gratify him to learn that the price of his fertilizer, his plows, his taxes, the wages of his help, in fact everything he buys remains approximately stable. It may—and then again it may not. It would be difficult to imagine a device more deliberately atrophic in its effect upon business and more profoundly demoralizing in its influence upon society.

It has been suggested that there is an analogy between the machinery of price determination and an automobile. The quantity of money is the steering mechanism. If a little pressure on the wheel is insufficient to turn the machine greater pressure is applied until the car moves as we wish. So likewise with money. If a one per cent increase in the quantity does not produce the desired effect add another per cent and so on until we produce the necessary change in prices. Like most analogies this one breaks down if pushed very far. Fortunately the suggestion by the advocates of stabilization allows us the license to use this particular comparison. All cars have two foot controls that effect the speed of the car. One is the break and the other the gas. In our financial car we likewise have two such controls, a decrease in the quantity of money and an increase. The lat-

²² Hearings on Goldsborough Bill, H. R. 11788, p. 106.

ter raises the speed of the car, the former checks it. Let us establish a government bureau as our chauffeur and take a ride. In anticipation of millennial bliss we clamber in and off we go. The chauffeur has never driven this kind of a car before but he has received unequivocal assurances as to power, flexibility and control. Only after he has his passengers aboard and is in the midst of traffic does he commence to experience doubts as to the virtues of his mechanical steed, doubts which soon turn to dismay. He discovers that when he steps on the accelerator the car sometimes picks up speed but sometimes actually goes into reverse of its own accord and starts to back up, e.g., the case of Germany during 1925 where an increase in the currency was followed by a decline in prices. On the other hand when he steps on the brake the response is equally fickle. Sometimes the car slows down but again the application of the brake is followed by an increase in speed, e.g., the rise in the discount rates of the Federal Reserve Banks during the latter part of 1919 and early part of 1920 was accompanied by an increase in prices. Another example of the same kind occurs in the Netherlands in 1924. The total notes in circulation in January of that year amounted to 1,008,309,000 guilders. The price level on a gold basis was 145 and on a paper currency basis 156. At the end of the year the circulation in guilders stood at 935,446,000 while the indices of the price level stood respectively at 160 and 161.³⁹ If given time our chauffeur will discover that there are four regulators instead of one and that they all have both positive and negative controls, i.e., they can be increased and decreased. He will further discover that two of these regulators which he does not seem to be able to reach are more important than the one he has at hand, viz., the amount of bank credit and the rate of turnover and that another of equal importance possibly is also beyond his reach, viz., the rate of turnover of money. To add to his difficulties it de-

³⁹ Commission of Gold and Silver Inquiry, United States Senate, *European Currency and Finance*, John Parke Young, Vol. II., Washington, 1925, pp. 329-330.

velops that a change in any one of the regulators has an effect on the other three. It is impossible to foretell how much or in what direction. To his further amazement the road on which he travels, the volume of trade and production, has most unusual qualities. Hills and gullies develop where but a moment ago his senses informed him a smooth level highway lay. The road under him actually changes while he is passing over it. Another fact casts further reflections on his sobriety. He is under the impression that he is gathering speed but on looking at the speedometer, the price level, he discovers that the car is slowing down and again he finds that the speedometer changes of its own accord and affects all four regulators including the one he is supposed to have under control, e.g., the Austrian experience, where changes in the price level preceded and apparently caused changes in the other factors. In short all the landscape needs is pink elephants and we will be in the land of Phantasia. An eccentric vehicle, indeed! Yet there are those who propose to take humanity joy riding in it.

To summarize the difficulties of basing a plan for stabilization on a rigid acceptance of the quantity theory of money we may say:

1. The equation of exchange is a statement of the relation of various price factors.
2. The equation of exchange does not endow any of these factors with causal significance.
3. Four factors affect the supply of means of payment and of these the most important is bank credit.
4. This factor as well as the amount of money in circulation may be affected by deliberate policy but it is extremely doubtful if they can be controlled within precise limits.
5. These two factors affect and place limitations upon each other but within these limitations there is much room for variation.
6. Each of these two factors represents but a single dimension of the magnitudes, money supply and credit supply.
7. The other two dimensions are money velocity and credit velocity. These two factors are not susceptible to deliberate policy and are governed by such ungovernable factors, as business confidence, confidence in the government,

and individual and mass psychology. They are the factors through which the human nature in economics operates.

8. Changes in those four factors affect the demand for means of payment, i.e., the volume of trade and production, and are in turn affected by the latter. How much? When? In what direction? No one *knows* until *after* the event.
9. This does not help determining the event.
10. Finally the price level itself may sometimes be the cause of changes in the other factors instead of an effect.

Within the limitations suggested above the quantity theory is a tenable hypothesis with a fair amount of empirical support. It is an excellent intellectual tool and is a guide to constructive thinking in monetary theory. But, and this is the point we wish to emphasize, it is not an adequate foundation for far reaching plans of stabilization. Like the sands of the desert the stones will shift. The mortar of knowledge necessary to fix them has not yet been discovered.

A general word of caution is necessary on the tendency to accept plausible hypotheses as precise physical laws. It is at best doubtful if economics has reached the stage where it may be spoken of as an exact science. Nothing is to be gained by pretending a degree of certainty and precision which is patently contradicted by the state of disagreement within the profession itself. Such an assumption of airs will serve only to invite ridicule to a branch of knowledge which is intimately associated with the welfare of the race. As the student constantly subjects external phenomena to exacting analysis and weighs carefully the evidence on both sides in order to avoid error so also must he constantly search his own soul and mind to evict the parasites of prejudice and self-delusion. There is great danger at present lest the theory upon which most of our plans for monetary reform are based be exalted to a pedestal and worshipped as ultimate truth. There is some reason to believe that it may prove to be a false god. To those who hold the infallibility of a literal quantity theory we commend the attitude of the American Society of Civil Engineers.

High in the Sierras in the State of California the Stevenson Creek Dam has been constructed at a cost of \$100,000 for the sole purpose of being destroyed in order that the strength of arch dam construction may be tested. It must be remembered that this is a physical project, that the factors and magnitudes involved are all capable of precise measurement, that elaborate tests can be made in laboratories to determine the strength of materials, the effects of stresses and strains and temperatures and age. These can be ascertained beyond all apparent chance before the dam is built. Yet in spite of all these assurances these men are asking themselves, "Can it be possible that we have omitted some factors? May we not have under-estimated some of the strains? May we not, in spite of all our precautions, have overestimated the strength of some of our materials? If we have made an error and innocent people, trusting implicitly in the correctness of our calculations and the strength of our construction, meet their doom an awful indictment will be in order. There is one further check necessary before we can assume this responsibility. We can actually build a dam where no lives will be endangered and verify those postulates on which we build." To quote the account in the New York Times (Sunday, March 25, 1928):

"Engineers who are conducting cooperative research hope that as a result of their studies disasters such as the breaking of the St. Francis Dam with the heavy loss of life can be prevented. A report covering the progress of operations is now in the course of preparation by the American Society of Civil Engineers. . . .

"'Engineering designs for structures and machines are usually based on computations,' Mr. Flinn said, 'Back of the computations are theories. The theories, in order to be safe guides for construction must be built on experimental knowledge. When the stock of knowledge is insufficient for the work required to be done, theories will disagree, often widely, and practice will become either uneconomical or unsafe.'"

In considering any scheme that tampers with the standard of value concerning which theories do disagree and very

widely and where experimental knowledge is inadequate and our instruments of measurement yield only approximate magnitudes we urge a caution at least comparable to that displayed by the American Society of Civil Engineers.

CHAPTER XXVII

SUMMARY AND CONCLUSION

Approval of End but Not Means of Stabilization—Precedent for Government Intervention—Inflation and Deflation—Attack on Gold Standard—Open Market Powers—Discount Rate as a Bank Cost—Discount Rate as a Cost of Bank Expansion—Graduated Discount Rates—The Quantity Theory and Price Stabilization—Measures to Promote Stability.

WE now turn to the task of summarizing the evidence and presenting our conclusions. There can be no doubt in the mind of the reader that the treatment which is here concluded has on the whole been hostile. Yet it must not be assumed that the author lacks sympathy with the purpose of stabilization. While he is unwilling to concede the multifarious and in some instances fantastic evils of rising and falling price levels so eloquently portrayed by the advocates of stabilization, his introductory treatment leaves no doubt of his wish that the exchange value of our monetary unit be maintained within reasonable limits. The function of money as a distributive agent is so important in the maintenance of industrial peace and the assurance of economic justice that any proposal which can give warrant of benefit in excess of harm deserves a trial.

There is ample precedent for government intervention. On many occasions have states interfered with the unit of value. These have been divided into three general types, the first due to governmental impecuniosity, the second to class pressure and the last to the effort to improve the standard itself. Due to the definite character of the object and general agreement as to means it has been much easier to secure intervention for the first two purposes than for the last. For the latter, the distance and humanitarian nature of the end, together with the division in the counsels of those who would guide the state, to say nothing of the doubt

concerning the precise nature of cause and effect of monetary phenomena, have served to make intervention less attractive and less probable.

However the post-war orgy of inflation with the sequential and saddening return to sobriety settled on the earth like a universal epidemic. The cost was so staggering that men's minds turned to a consideration of remedies. Plans which had previously engaged the attention only of learned societies now became practical issues of the day. Old schemes brought forth their garments from musty wardrobes and polished and brushed and dusted, presented themselves at the bar of legislative consideration. Encouraged by general interest and apparent necessity, a swarm of other plans, good, bad and indifferent appeared to claim attention. Although differing in attire the basic premises were the same.

It is impossible to build anew on a site already occupied unless the old structure is razed. The gold standard therefore must be discarded. Much of the suffering caused by changes in the value of the standard was due to exceptional emergencies as war and doubtful adventures in paper currency. It was freely conceded that the best of these plans would break under the stress of war. Yet the ardent advocates of reform had no hesitancy in indicting the gold standard on the evidence of defective service during exactly such a crisis. Myopic logic attributed the evils of paper inflation to the gold standard. The latter was compared by these advocates with other standards and invariably came in a poor last. Even eggs were better although their exchange value proved on examination to pass through a greater cycle of changes every twelve months than gold had sustained in a century and a half. A careful study of the gold standard proved the indictment unfounded. Changes in value took place to be sure and the changes during war were sufficiently great to cause much hardship. In the latter event a managed standard would have fared no better. In times of peace, gold gave a good account of itself, and we find that its alleged defects have been grossly exaggerated.

Since the Federal Reserve Board was freely reputed to have made the post-war inflation and deflation possible through deliberate policy, it followed that a great deal of power resided in that body. That the Board was not conscious of this power was not an acceptable answer. The Board was astute. For reasons of policy it could not admit the power it wielded. Protestations of innocence only served to establish its shrewdness and duplicity.

The Board, so our stabilization champions maintained, controlled two great levers; the right to participate in the open market and the right to regulate the rediscount rate. When credit was excessive it sold securities; when scarce it bought them. In the former case credit was restricted; in the latter it was extended. This proposition we examined at length. We found that the central bank exercised initiative only in the purchase and sale of government securities. With this restriction granted it would nevertheless have the power imputed to it. The manipulation was more apparent than real. The sale of government securities, while impairing member bank reserves, was immediately compensated by an increase in rediscounts. As far as the Federal Reserve Banks were concerned, one form of assets was exchanged for another. The credit supply was not altered. The member banks, it is true, were compelled to come to the central bank and it was in a position to make them pay more for accommodation. Insofar as this higher discount rate resulted in a restriction of credit, this device was effective. The record fails to show that an actual change in the credit supply took place. As far as this lever of price control is concerned, we find it has been vastly overrated.

Much has been said and written about the influence of central bank rates. A proper use of the discount rate will endow the price level with amazing and responsive agility. A rise in the discount rate, increasing the price of credit, will reduce its use and since prices depend upon the total of money and credit they must drop. A decline in the discount rate will increase prices. Nothing could be simpler.

Under a careful examination this attractive device breaks down.

In the first place we find that the interest which a borrowing bank pays for its credit at the central bank constitutes but a small fraction of the cost of extending credit in turn to its own clients. We found that over a period of nine years the cost of interest paid to the central bank amounted to approximately one dollar out of every twenty which the bank spent. As a cost factor it is so negligible that it could be multiplied twentyfold and be compensated by an increase of five per cent in the rate charged to the member bank client. Neither does an increase in the central bank rate appear to impair the profit of the borrowing bank. The maximum profits in American banking coincided with maximum central bank charges. It would be much more reasonable to attempt to apply cost pressure on banks by controlling salaries of bank workers. As a cost item this is four times as important as interest on borrowed money. The purpose of the higher discount rate is to raise the cost of credit to business. Unless the bank, the intermediary between the central bank and the business community, experiences sufficient pressure there will be no need for raising the rate to its own customers. Furthermore there are limitations beyond which the central bank cannot go. The community rate of interest is the result of law, custom and a number of general factors not susceptible to control. It is not an artificial price which the central bank can regulate at will. To be successful in unlimited regulation would in fact be dangerous. Among the interests adversely affected by a rise in the community rate, would be the government itself and should this higher rate result in hardship, the Federal Reserve Banks would find themselves summarily called to account.

Regarded from another angle the central bank rate again demonstrates its impotence. It is a mistake to view the member bank as a broker who takes credit from the central bank to pass it on directly to his own clients. The bank in actual practice first extends credit to its own customers and

only when this increase in credit calls for additional reserves does it resort to the central bank. In a period of general expansion it may be able to extend credit to an amount equal to ten times the accommodation which it secures from the central reservoir. At other times this multiple will be much less. Since the bank already has certain overhead expenses which it must meet, the specific out-of-pocket expense attributable to such expansion is the cost of the central bank loan. If it can multiply this to its clients by five, it can readily be seen that we shall have to revise our notions of when a central bank rate becomes "effective."

On one occasion in our recent monetary history an attempt was made to push the discount theory to its logical extreme. The Federal Reserve Banks were given the power to graduate their rates so that they would vary with the amount by which a member bank exceeded its basic line. This basic line was considered the normal amount of credit to which a member bank was entitled, by virtue of its contribution to the strength of the central bank. Any excess above this line was progressively penalized. In one case the rate on the last increment of borrowed credit amounted to 87½ per cent. Not all the districts had progressive rates. Deflation moved most tardily in those which had the graduated rates and most rapidly in those which had the lowest flat rates. The experiment loosed such a storm of protest on the Federal Reserve Board as it had never before experienced. Every possible malign motive was attributed to it by flannel-throated agitators. The political peril of central bank control became a reality, while none of the putative beneficent ends could be discerned. The lesson was entirely lost on those who later proposed to endow the Federal Reserve Banks with the power to stabilize prices. Perhaps it serves to throw light on the unvarying hostility of officials of the Federal Reserve System, to all plans of price stabilization.

Frequent comparison has been made with the Bank of England. As an example of the effectiveness of discount policy it has been intensely exploited. There are so many

cardinal differences between the Bank of England and the Federal Reserve System as to vitiate any comparison. All the advantage lies with the English institution. Yet the history of the Bank of England's discount policy fails to reveal any correlation between the discount rate and the price level. If the rate is such an anæmic instrument of price control under the most favorable conditions, what are we to expect of a system which is still cutting its first teeth?

We must conclude then that no power which the Federal Reserve Board at present has, and none which it can safely exercise, will assure stability of prices. A judicious employment of its present powers will help to promote stability when accompanied by favorable general conditions. Those powers can influence the price level. They can not control it. How great that influence is we do not know and there is no way of ascertaining it. Its extent is dependent upon conditions not susceptible to human manipulation.

While the ultimate end of Federal Reserve action is expected to be the price level, the immediate direct effect must first be felt on the supply of money and credit. Their final effectiveness then would depend upon the causal relationship of the monetary supply and prices. The extent, the time and sometimes the direction of the effect on prices of a given change in the monetary supply is unpredictable. In no sense can we regard our monetary mechanism as a scientific instrument. We have no right to place the welfare of the nation in jeopardy with far-reaching experiments based upon a disputed hypothesis.

We are no less interested in eliminating the vagaries, insofar as they actually exist, of the monetary unit than those whose plans we have so freely criticized. As an earnest of our good faith in this statement we will advance our own proposals. These are based upon a knowledge of the principal cause of disturbances in the value of money, and a knowledge of the factors which, in the past, have been most effective in promoting stability. Instead of razing the existing structure we shall urge its preservation. We shall

urge that its care be entrusted to safe hands that it may continue in the future to render that splendid service of which it has given such convincing and unfailing evidence in the past.

In the first place we urge the encouragement of all efforts to promote peace among nations since war has been, of all causes the most prolific, in disturbing the value of the exchange standard.

In the second place we advise the retention and improvement of existing gold standards since it appears to be the reasoned judgment of most nations that gold has provided a greater stability in the unit of payment, internally and externally, than any other standard. This judgment is founded upon centuries of experience. A careful empirical decision is safer than a deductive impulse.

Since the maintenance of stability is *partly* a problem of intelligent administration, every possible encouragement should be given to those charged with the task. Specifically we mean that the officials of the Federal Reserve System be relieved of the constant threat of investigation, that the present integrity of the Federal Reserve Act be maintained through freedom from constant tampering, that the system and the men who guide it be given an opportunity to develop an intelligent and effective procedure and a *tradition* of leadership comparable at least to that which the Bank of England enjoys, to the end that the powers which the law bestows may be exercised most effectively in the effort to promote stability.

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